

Torreya State Park

APPROVED Unit Management Plan



**STATE OF FLORIDA
Department of Environmental Protection**

**Division of Recreation and Parks
February 10, 2012**

TABLE OF CONTENTS

INTRODUCTION	1
PURPOSE AND SIGNIFICANCE OF THE PARK	1
PURPOSE AND SCOPE OF THE PLAN	2
MANAGEMENT PROGRAM OVERVIEW	7
Management Authority and Responsibility	7
Park Management Goals	8
Management Coordination.....	8
Public Participation.....	9
Other Designations.....	9

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION	11
RESOURCE DESCRIPTION AND ASSESSMENT	14
Natural Resources	14
Topography	14
Geology	14
Soils.....	14
Minerals	21
Hydrology.....	21
Natural Communities (FNAI).....	21
Imperiled Species.....	33
Exotic Species	41
Special Natural Features.....	44
Cultural Resources	45
Condition Assessment	45
Level of Significance.....	45
Prehistoric and Historic Archaeological Sites	46
Historic Structures.....	49
Collections	54
RESOURCE MANAGEMENT PROGRAM	61
Management Goals, Objectives and Actions.....	61
Natural Resource Management.....	61
Hydrological Management	61
Natural Communities Management.....	62
Imperiled Species Management	67
Exotic Species Management.....	69
Special Management Considerations	70
Timber Management Analysis.....	70
Arthropod Control Plan.....	71
Additional Considerations	71

Cultural Resource Management.....	71
Resource Management Schedule	74
Land Management Review	74
 LAND USE COMPONENT	
INTRODUCTION.....	75
EXTERNAL CONDITIONS	75
Existing Use of Adjacent Lands.....	75
Planned Use of Adjacent Lands	76
PROPERTY ANALYSIS.....	76
Recreation Resource Elements.....	76
Land Area	77
Water Area.....	77
Natural Scenery	77
Significant Wildlife Habitat.....	78
Natural Features	78
Archaeological and Historic Features.....	79
Assessment of Use.....	79
Past Uses	79
Future Land Use and Zoning.....	79
Current Recreation Use and Visitor Programs.....	80
Other Uses	80
Protected Zones	80
Existing Facilities	83
Recreation Facilities.....	83
Support Facilities	84
CONCEPTUAL LAND USE PLAN	85
Potential Uses.....	86
Public Access and Recreational Opportunities	86
Proposed Facilities.....	89
Capital Facilities and Infrastructure	89
Facilities Development	94
Existing Use and Optimum Carrying Capacity	96
Optimum Boundary	97

IMPLEMENTATION COMPONENT

MANAGEMENT PROGRESS	101
Acquisition	101
Park Administration and Operations.....	101
Resource Management	101
Natural Resources	101
Cultural Resources	102
Recreation and Visitor Services.....	102
Park Facilities	102
MANAGEMENT PLAN IMPLEMENTATION	102

TABLES

TABLE 1 – State Park Management Zones	12
TABLE 2 – Imperiled Species Inventory	35
TABLE 3 – Inventory of FLEPPC Category I and II Exotic Plant Species	42
TABLE 4 – Cultural Sites Listed in the Florida Master Site File	55
TABLE 5 – Prescribed Fire Management	63
TABLE 5 – Existing Use and Optimum Carrying Capacity	96
TABLE 6 – Implementation Schedule and Cost Estimates	105

MAPS

Vicinity Map.....	3
Reference Map	5
Management Zones Map	15
Topographic Map.....	17
Soils Map	19
Natural Communities Map.....	23
Base Map	81
Conceptual Land Use Plan.....	87
Optimum Boundary Map	99

LIST OF ADDENDA

ADDENDUM 1

Acquisition History A 1 - 1

ADDENDUM 2

Advisory Group List and Report A 2 - 1

ADDENDUM 3

References Cited A 3 - 1

ADDENDUM 4

Soil Descriptions A 4 - 1

ADDENDUM 5

Plant and Animal List A 5 - 1

ADDENDUM 6

Imperiled Species Ranking Definitions A 6 - 1

ADDENDUM 7

Cultural Information A 7 - 1

ADDENDUM 8

Timber Management A 8 - 1

ADDENDUM 9

Current Land Management Review A 9 - 1

INTRODUCTION

Torrey State Park is located in Liberty and Gadsden Counties, on the east side of the Apalachicola River (see Vicinity Map); access to the park is from State Road 12 and County Road 1641 (see Reference Map). In addition, significant land and water resources existing near the park have been identified on the Vicinity Map.

Torrey State Park was acquired in 1935 with “Old Money” funds (see Addendum 1). According to Lease No. 3645 from the Board of Trustees of the Internal Improvement Trust Fund (Trustees), the Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP) manages Torrey State Park for the purpose of developing, operating and maintaining the property for outdoor recreational, park, conservation, historic and related purposes.

Currently the park contains 13,737 acres and the designated single use is for public outdoor recreation and conservation of the property. There are no legislative or executive directives that constrain the use of this property.

PURPOSE AND SIGNIFICANCE OF THE PARK

Torrey State Park is one of the original Florida state parks that were developed by the Civilian Conservation Corps (CCC) during the Great Depression. The park was named for the rare Florida tree, *Torreya taxifolia*, which was named for the American botanist, John Torrey. The site was selected to be a park primarily because it possessed significant historical associations, including the location of six Confederate gun pits along Battery or Neal’s Bluff and an antebellum cotton warehouse at Rock Bluff Landing. Those historical resources prompted CCC planners to create plans that included dismantling and relocating the historic Jason Gregory House from its original location at Ocheese Landing across the Apalachicola River. The house’s location on the high bluffs overlooking the river now provides one of Florida’s most scenic views.

Today, the park plays a critical role in preserving unique plant and animal species and natural communities that are of regional importance, and protecting the water quality of the Apalachicola River, which feeds the productive Apalachicola Bay. The park’s high plateaus, steep bluffs and deep ravines are covered with rich forests that harbor a variety of rare and endemic plants and animals, many of which are more common further north than this location. As in the past, the park continues to provide the public with exceptional scenic vistas and challenging hiking terrain as well as attractive camping and picnicking areas.

Torrey State Park is classified as a state park in DRP’s unit classification system. In the management of a state park, a balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities are aimed at management of natural systems.

Development in the park is directed toward providing public access to and within the park, and to providing recreational facilities, in a reasonable balance, that are both convenient and safe. Program emphasis is on interpretation on the park's natural, aesthetic and educational attributes.

PURPOSE AND SCOPE OF THE PLAN

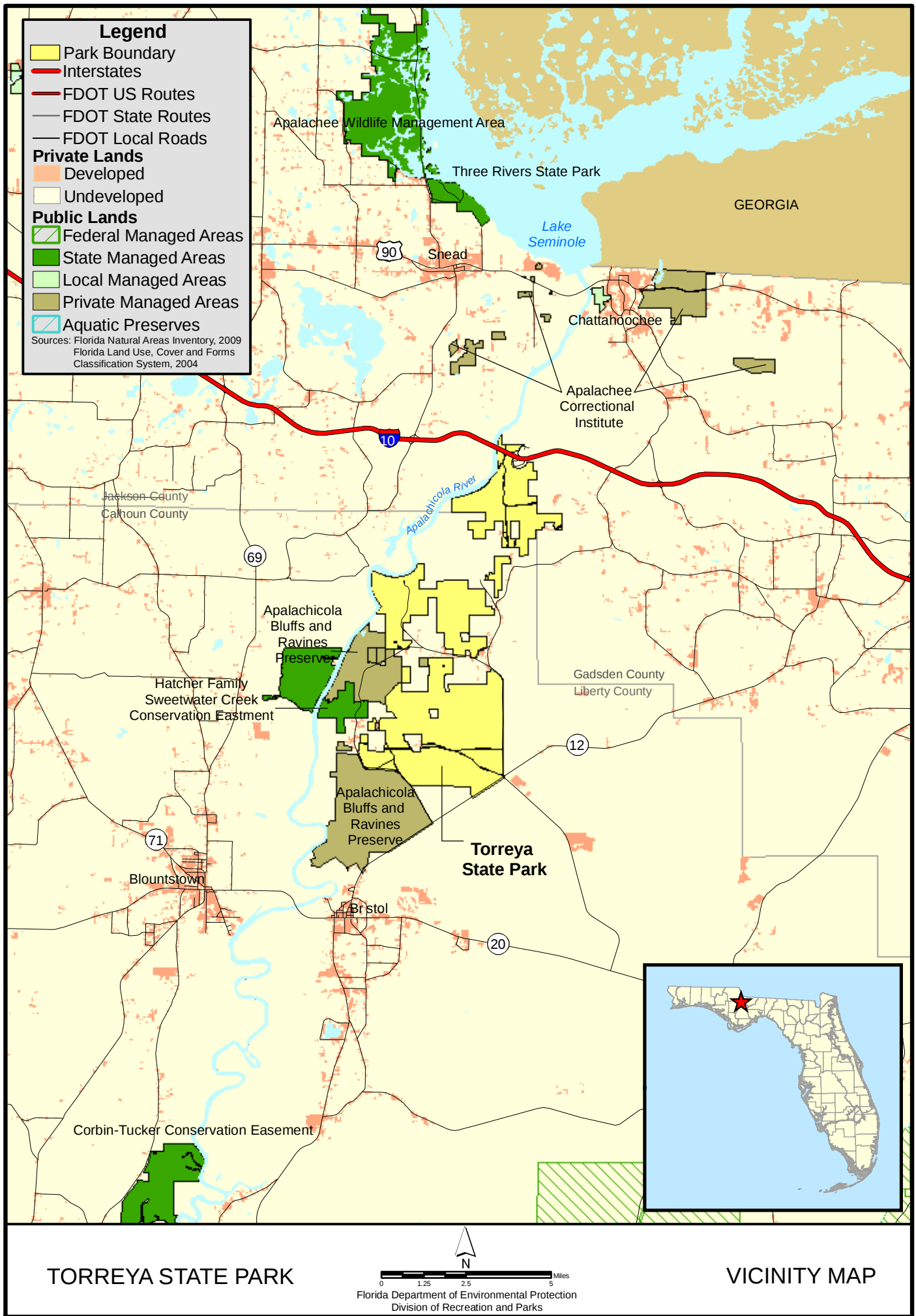
This plan serves as the basic statement of policy and direction for the management of Torreya State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and is intended to be consistent with the State Lands Management Plan. Upon approval, this management plan will replace the 1999 approved plan.

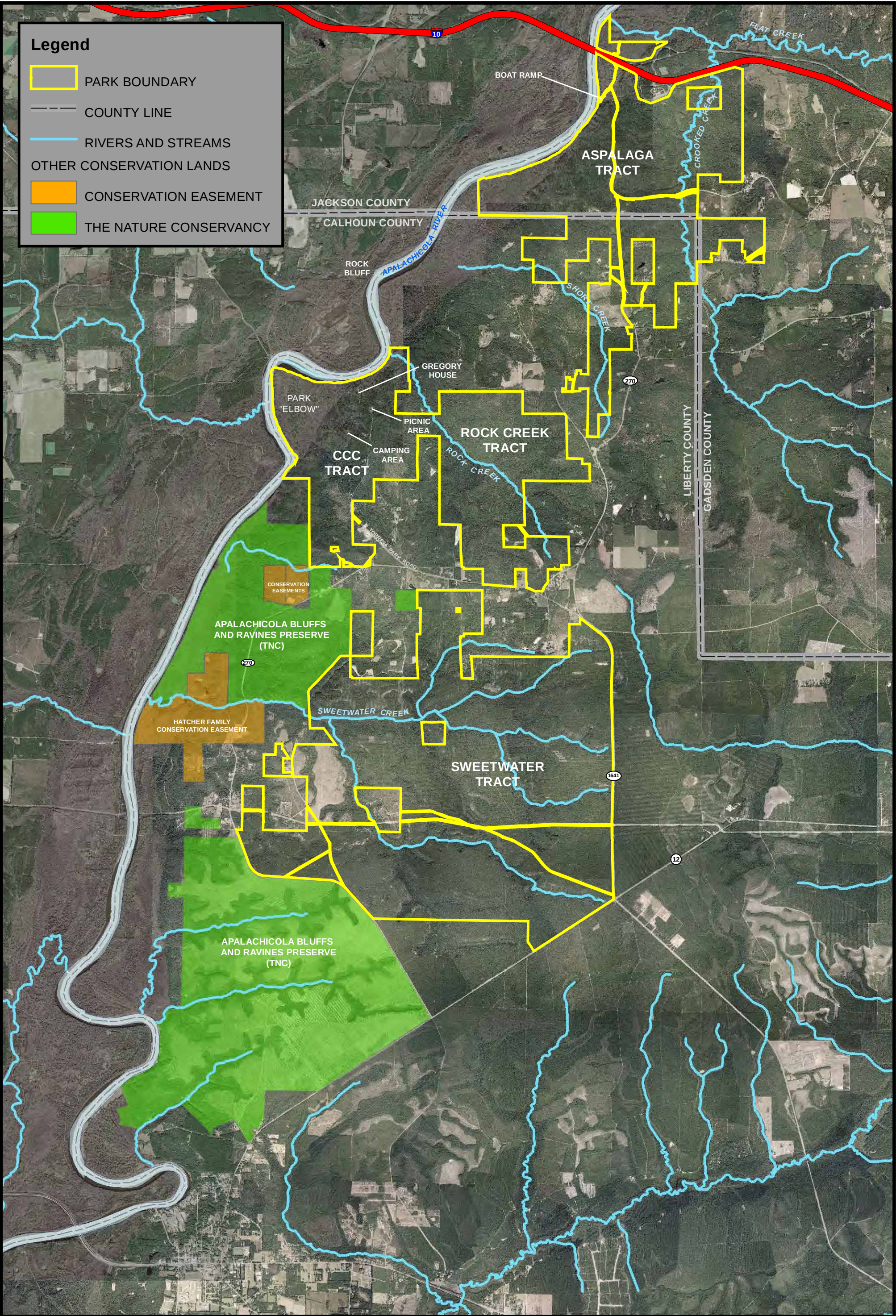
The plan consists of three interrelated components: the Resource Management Component, the Land Use Component and the Implementation Component. The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management needs and issues are identified, and measurable management objectives are established for each of the park's management goals and resource types. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, imperiled species management, cultural resource management and restoration of natural conditions.

The Land Use Component is the recreational resource allocation plan for the park. Based on considerations such as access, population, adjacent land uses, the natural and cultural resources of the park, current public uses and existing development, measurable objectives are set to achieve the desired allocation of the physical space of the park. These objectives locate use areas and propose the types of facilities and programs and the volume of public use to be provided.

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost estimates are included for each objective and action. Included in this table are (1) measures that will be used to evaluate DRP's implementation progress, (2) timeframes for completing actions and objectives and (3) estimated costs to complete each action and objective.

All development and resource alteration proposed in this plan is subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies.





Legend

- PARK BOUNDARY
- COUNTY LINE
- RIVERS AND STREAMS
- OTHER CONSERVATION LANDS
 - CONSERVATION EASEMENT
 - THE NATURE CONSERVANCY

In the development of this plan, the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that timber management activities for restoration could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose is addressed in the Resource Management Component of the plan. Uses such as, water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that timber management activities would be appropriate at this park as an additional source of revenue for land management since it is compatible with the park's primary purpose of resource-based outdoor recreation and conservation.

The use of private land managers to facilitate restoration and management of this park was also analyzed. Decisions regarding this type of management (such as outsourcing, contracting with the private sector, use of volunteers, etc.) will be made on a case-by-case basis as necessity dictates.

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

In accordance with Chapter 258, Florida Statutes and Chapter 62D-2, Florida Administrative Code, DRP is charged with the responsibility of developing and operating Florida's recreation and parks system. These are administered in accordance with the following policy:

It shall be the policy of the Division of Recreation and Parks to promote the state park system for the use, enjoyment, and benefit of the people of Florida and visitors; to acquire typical portions of the original domain of the state which will be accessible to all of the people, and of such character as to emblemize the state's natural values; conserve these natural values for all time; administer the development, use and maintenance of these lands and render such public service in so doing, in such a manner as to enable the people of Florida and visitors to enjoy these values without depleting them; to contribute materially to the development of a strong

mental, moral, and physical fiber in the people; to provide for perpetual preservation of historic sites and memorials of statewide significance and interpretation of their history to the people; to contribute to the tourist appeal of Florida.

The Trustees have also granted management authority of certain sovereign submerged lands to DRP under Management Agreement MA 68-086 (as amended January 19, 1988). The management area includes a 400-foot zone from the edge of mean high water where a park boundary borders sovereign submerged lands fronting beaches, bays, estuarine areas, rivers or streams. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. The agreement is intended to provide additional protection to resources of the park and nearshore areas and to provide authority to manage activities that could adversely impact public recreational uses.

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in DRP's Operations Manual (OM) that covers such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, public use regulations, resource management, law enforcement, protection, safety and maintenance.

Park Management Goals

The following park goals express DRP's long-term intent in managing the state park.

1. Provide administrative support for all park functions.
2. Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
3. Restore and maintain the natural communities/habitats of the park.
4. Maintain, improve or restore imperiled species populations and habitats in the park.
5. Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
6. Protect, preserve and maintain the cultural resources of the park.
7. Provide public access and recreational opportunities in the park.
8. Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

Management Coordination

The park is managed in accordance with all applicable laws and administrative rules. Agencies having a major or direct role in the management of the park are discussed in

The Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest

Service (FFS), assists DRP staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FFWCC), assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FFWCC aids DRP with wildlife management programs, including imperiled species management and Watchable Wildlife programs. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites.

Public Participation

A public workshop was conducted on Wednesday, May 18, 2011. The purpose of the workshop was the presentation to the draft management plan to the public. On Thursday, May 19, 2011, an Advisory Group meeting was held. The purpose of this meeting was to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2). Meeting notices were published in the Florida Administrative Weekly, on April 29, 2011 Vol. 37/17, included on the Department Internet Calendar, posted in clear view at the park, and promoted locally.

Other Designations

Torrey State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the DEP.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this park are also classified as Class III waters by the Department. This park is not adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP) in accordance with Chapter 258, Florida Statutes, has implemented resource management programs for preserving for all time the representative examples of natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. Management measures expressed in this plan is consistent with the DEP's overall mission in ecosystem management. Cited references are contained in Addendum 3.

DRP's philosophy of resource management is natural systems management. Primary emphasis is placed on restoring and maintaining, to the degree possible, the natural processes that shaped the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management for imperiled species is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

DRP's management goal for cultural resources is to preserve sites and objects that represent Florida's cultural periods, significant historic events or persons. This goal often entails active measures to stabilize, reconstruct or restore resources, or to rehabilitate them for appropriate public use.

Because park units are often components of larger ecosystems, their proper management can be affected by conditions and events that occur beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program that assesses resource conditions, evaluates management activities and refines management actions, and reviews local comprehensive plans and development permit applications for park/ecosystem impacts.

The entire park is divided into management zones that delineate areas on the ground that are used to reference management activities (see Management Zones Map). The shape and size of each zone may be based on natural community type, burn zone, and the location of existing roads and natural fire breaks. It is important to note that all burn zones are management zones; however, not all management zones include fire-dependent natural communities. Table 1 reflects the management zones with the acres of each zone.

Table 1: Torreya State Park Management Zones		
Management Zones	Zone Acres	Managed With Prescribed Fire
TY-A	188.93	Y
TY-A01	354.82	Y
TY-A02	149.64	Y
TY-A03	51.65	Y
TY-A04	161.96	Y
TY-A05	188.78	Y
TY-A06	192.65	Y
TY-A07	81.16	Y
TY-A08	148.43	Y
TY-A09	39.92	Y
TY-A10	27.16	
TY-A11	10.18	
TY-A12	63.17	Y
TY-A13	26.02	
TY-A14	266.92	Y
TY-A15	190.87	Y
TY-A16	9.73	Y
TY-A17	174.77	Y
TY-A18	94.25	Y
TY-A19	23.00	
TY-A20	47.53	
TY-A21	88.84	Y
TY-A22	55.40	
TY-A23	36.24	
TY-A24	205.50	
TY-A25	8.01	Y
TY-A26	82.19	Y
TY-A27	41.94	Y
TY-A28	53.55	Y
TY-A29	57.97	Y
TY-B	209.10	Y
TY-C	126.27	Y
TY-D	117.63	Y
TY-E1	113.87	Y
TY-E2	1.25	
TY-F	89.61	Y
TY-G	130.61	Y
TY-H	71.89	Y
TY-I	41.54	Y
TY-J	242.01	Y
TY-K	147.91	Y
TY-L	243.03	Y

Table 1: Torreya State Park Management Zones		
Management Zones	Zone Acres	Managed With Prescribed Fire
TY-M	97.13	Y
TY-N	125.26	
TY-O	45.08	Y
TY-P	17.13	Y
TY-Q	27.23	Y
TY-R	107.29	Y
TY-S	48.47	Y
TY-S01A	288.43	Y
TY-S01B	47.18	Y
TY-S01C	41.21	
TY-S01D	46.33	Y
TY-S02	365.86	Y
TY-S03	317.30	Y
TY-S04	30.84	Y
TY-S05	491.66	Y
TY-S06	178.33	Y
TY-S07	499.65	Y
TY-S08	153.79	Y
TY-S09	138.45	Y
TY-S10	512.25	Y
TY-S11	229.64	Y
TY-S12	79.95	Y
TY-S13A	17.21	
TY-S13B	109.57	Y
TY-S13C	55.37	Y
TY-S13D	115.06	Y
TY-S14	80.93	Y
TY-S15	463.97	Y
TY-S16	167.54	Y
TY-S17	395.38	Y
TY-S18	380.67	Y
TY-S19	294.89	Y
TY-S1E	8.56	Y
TY-S20	271.12	Y
TY-S21	345.58	Y
TY-S22	376.04	Y
TY-S24	114.46	Y
TY-S25	147.67	Y
TY-S26	160.74	Y
TY-S27	41.47	Y
TY-T	194.21	Y
TY-U	78.72	Y

Table 1: Torreya State Park Management Zones		
Management Zones	Zone Acres	Managed With Prescribed Fire
TY-V	107.14	Y
TY-W	39.67	Y
TY-X	92.96	Y
TY-Y	352.07	Y
TY-Z	159.58	Y

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

The park occurs in the physiographic province known as the Northern Highlands (Randazzo and Jones 1997). The topographic variation of Torreya State Park is extreme in contrast to other regions of the state. This park is situated within the physiographic zone known as the Tallahassee Hills with elevations ranging from 50 to 262 feet above mean sea level (see Topographic Map).

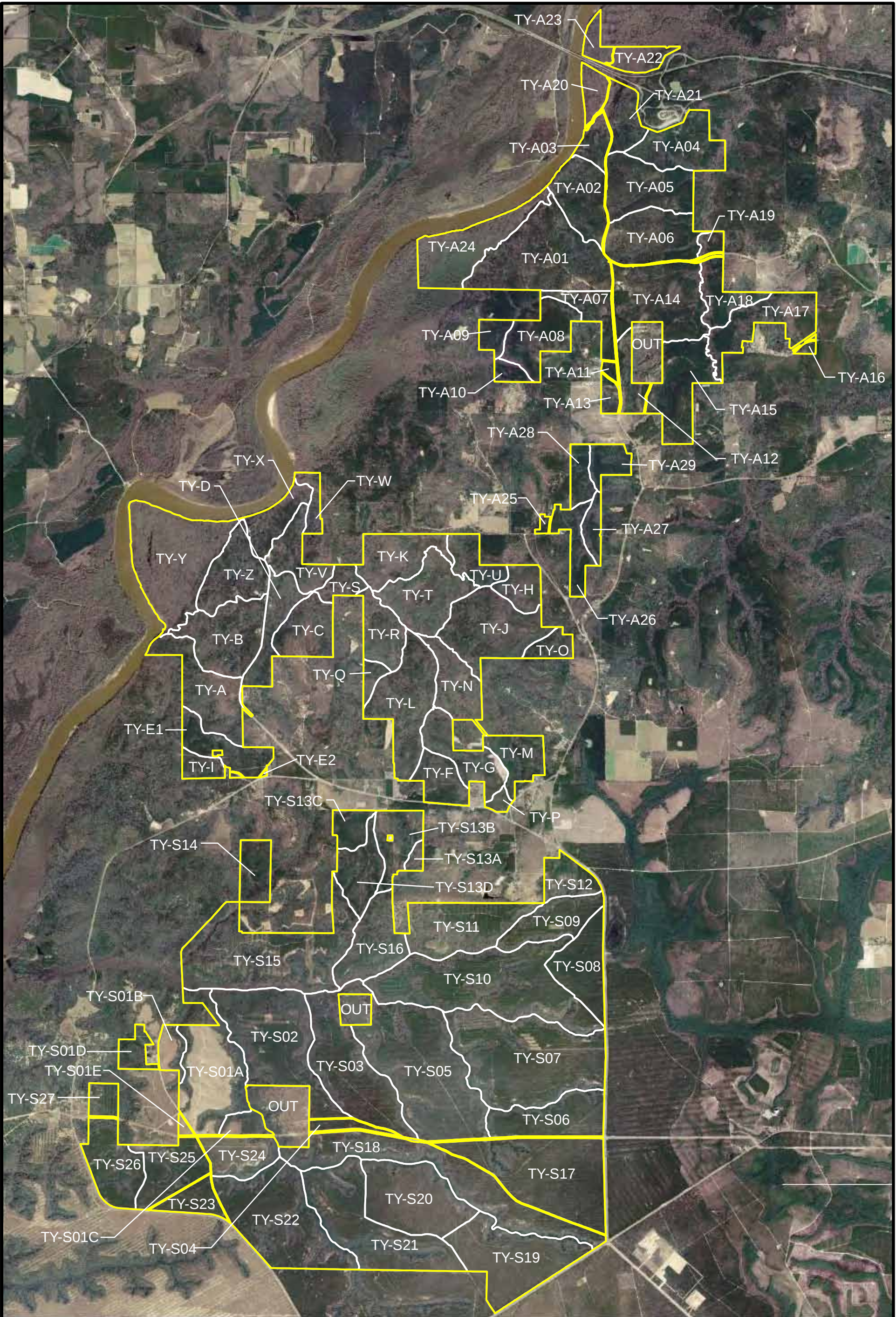
Geology

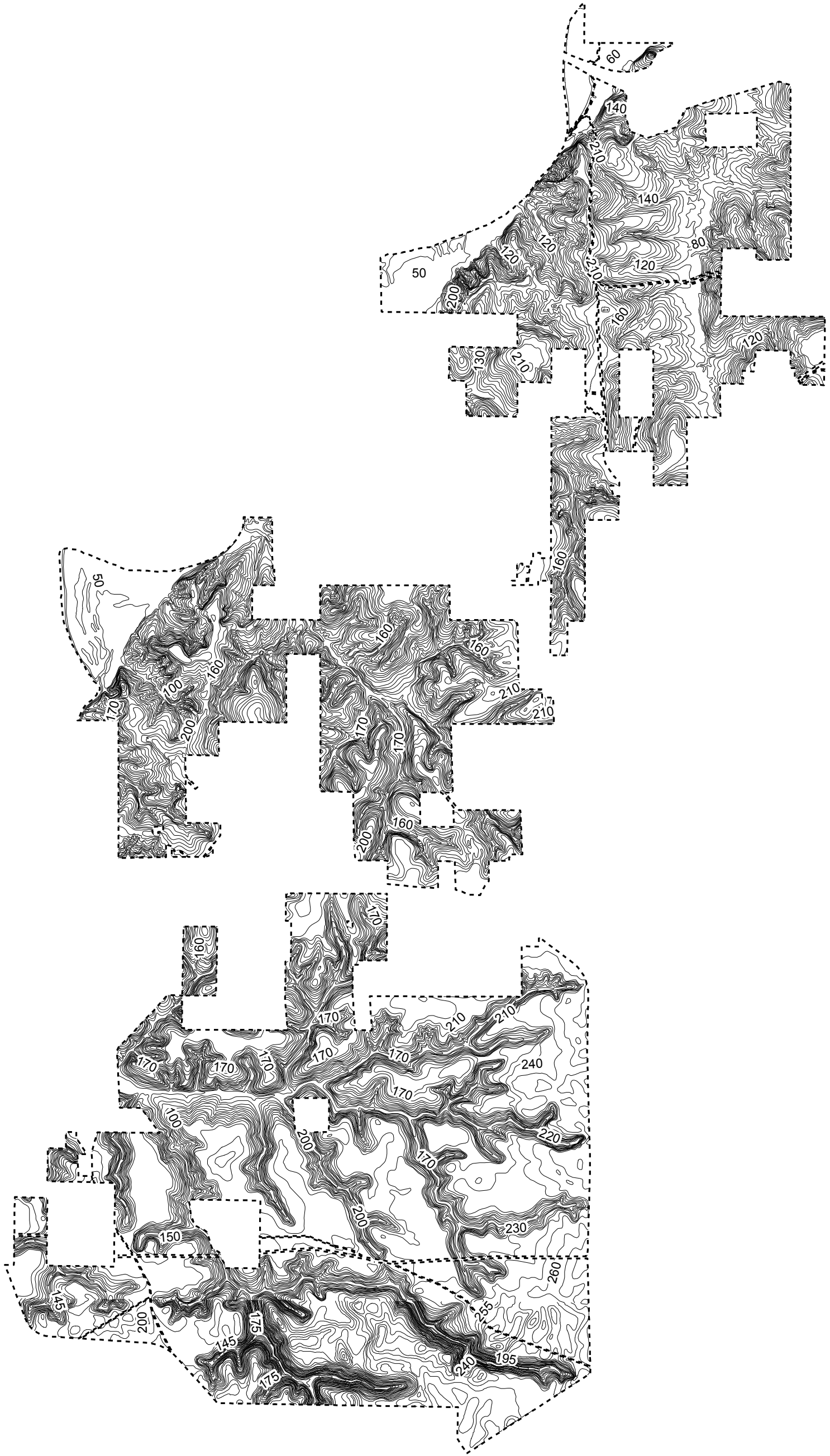
The bedrock of the Florida panhandle is largely limestone and some dolomite over which sands and other sediments have been deposited. The limestone of this area was deposited some 15 million years ago, during the Miocene epoch. Due to erosion forces of the Apalachicola River, smaller tributary streams and steephead streams, several geological features can be seen on the surface at Torreya State Park. The formation that is exposed at Aspalaga Landing is the lower Miocene Chattahoochee Formation. It is a cream-colored rock (dolosilt) that commonly has dugong and other marine fossils eroding out of it. At Rock Bluff, the Torreya formation is exposed on the surface, which is also lower Miocene but is thought to be younger than the Chattahoochee Formation (18 million years old). At the bottom of some of the steephead streams in the Sweetwater basin, erosion has exposed the Hawthorne member of the Torreya formation. It dates from the early Miocene, perhaps 16-17 million years old.

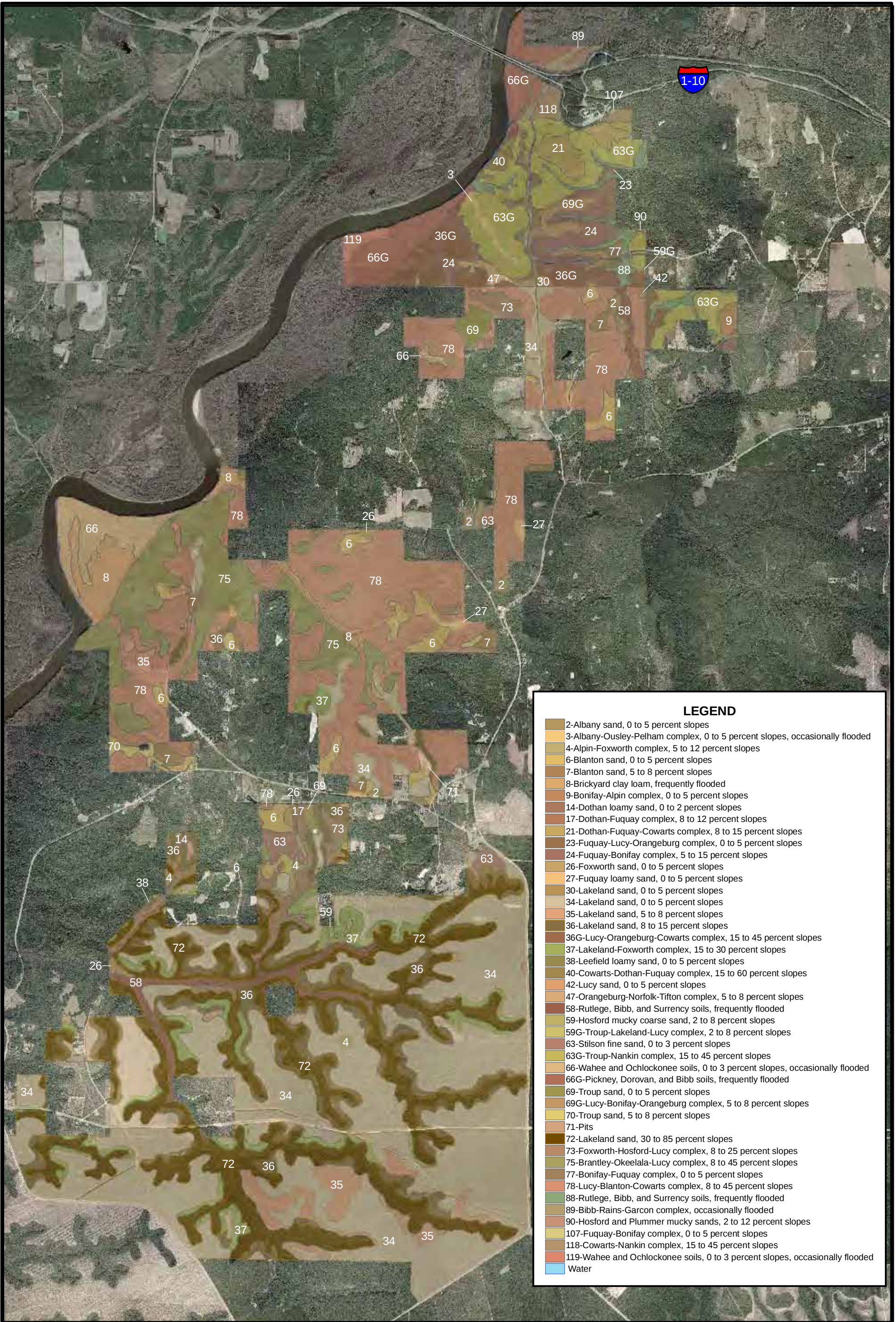
Soils

The United States Department of Agriculture (USDA), Natural Resources Conservation Service has recently completed a complete survey of the soils of Liberty County. The park is known to contain 46 different soil types in Liberty and Gadsden counties (see Soils Map). A complete description of the soils of the park can be found in Addendum 4.

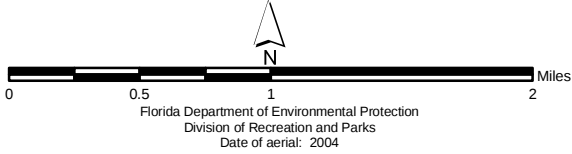
Management activities will follow generally accepted best management practices established in the current edition of the Florida Department of Agriculture and Consumer Services (FDACS) Silviculture Best Management Practices to prevent soil erosion and conserve soil and water resources on site.







TORREYA STATE PARK



SOILS MAP

Minerals

There are no known mineral deposits of commercial value at Torreya State Park.

Hydrology

The Apalachicola-Flint-Chattahoochee river system has the greatest total length (500 miles), greatest average flow (25,000 cfs), and largest drainage basin (over 20,000 square miles) of any Florida river system. Just south of the confluence of the Flint and Chattahoochee rivers, at the Florida - Georgia border, the Jim Woodruff Dam was constructed by the U.S. Army Corps of Engineers (USACOE) in 1957. The dam created the shallow, 37,500-acre Lake Seminole. South of the lake, the river is renamed the Apalachicola.

The Apalachicola River flows 107 miles southward, entirely in Florida, into Apalachicola Bay. Before entering Florida, the river system receives numerous discharges from Atlanta and other urbanized areas. These discharge sources include textile mills, paper mills, wastewater treatment plants, steam power plants and a nuclear power plant. Extensive runoff from agricultural areas of Alabama and Georgia also enter the river system. Despite these outside influences, the Apalachicola River is designated as an Outstanding Florida Water.

Torreya's Rock Creek is a major seepage stream that flows into the Apalachicola River. The creek's feeder streams are located outside park boundaries, but several secondary branches are fully contained within the park. The water of Rock Creek is clear and has a stable water temperature of about 70 degrees year-round.

With the recent acquisition of the Sweetwater tract, Torreya now contains a virtually intact steephead stream basin, including its feeder creeks which originate at the heads of deep ravines eroded into the coarse sandy soils (see Means 1991).

Two additional Apalachicola tributary streams were acquired with the recent state purchase of the Aspalaga tract, north of the "old park." A large portion of the entire basins of Short Creek and Crooked Creek are included in these new park properties. Although too small to provide boating access, they provide excellent examples of upper Apalachicola bluff creeks.

Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes of the desired future condition of each natural community and identifies the actions that will be required to bring the community to its desired future condition (DFC). Specific management objectives and actions for natural community management, exotic species management, imperiled species management and restoration are discussed in the Resource Management

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors such as climate, geology, soil, hydrology and fire frequency generally determine the species composition of an area, and that areas that are similar with respect to those factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, despite similar physical conditions. In other instances, physical factors are substantially different, yet the species compositions are quite similar. For example, coastal strand and scrub--two communities with similar species compositions--generally have quite different climatic environments, and these necessitate different management programs. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

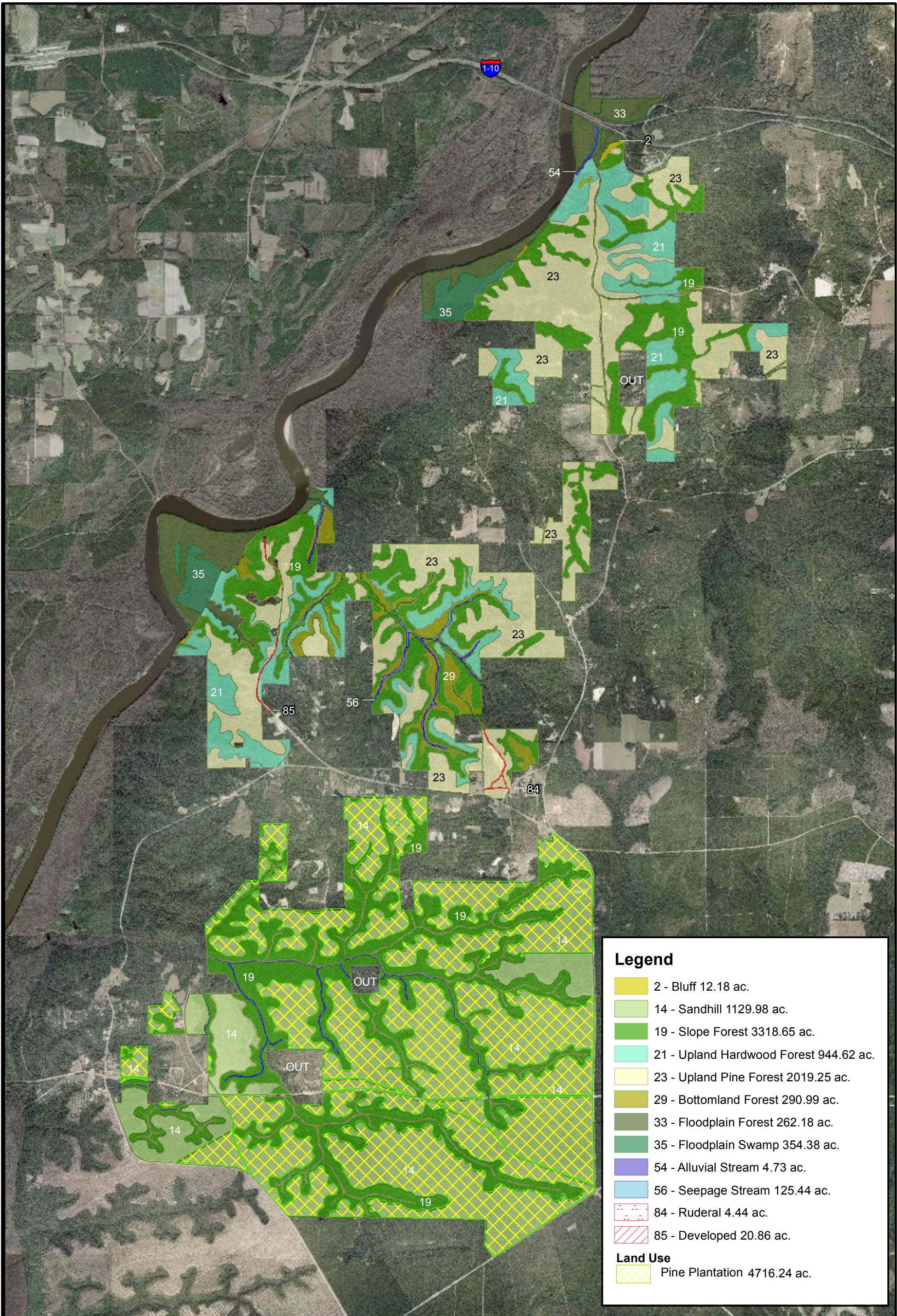
When a natural community within a park reaches the desired future condition, it is considered to be in a "maintenance condition." Required actions for sustaining a community's maintenance condition may include, maintaining optimal fire return intervals for fire dependant communities, ongoing control of non-native plant and animal species, maintaining natural hydrological functions (including historic water flows and water quality), preserving a community's biodiversity and vegetative structure, protecting viable populations of plant and animal species (including those that are imperiled or endemic), and preserving intact ecotones linking natural communities across the landscape.

The park contains eleven distinct natural communities as well as ruderal and developed areas (see Natural Communities Map). A list of known plants and animal species occurring in the park is contained in Addendum 5.

BLUFF

Desired future condition: The bluff community exhibits exposed cliff sides typically resulting from active erosion along slopes of riverine natural communities. Vegetation will be typically very sparse because of the unstable conditions. Early pioneering species such as goldenrod, golden-aster, winged sumac, dog fennel, ragweed, and broomsedge will occur. Erosion is a driving force of this community. It is often difficult to differentiate natural bluffs from human induced disturbed ones. Desired conditions will include eliminating erosion from unnatural causes by maintaining natural hydrological flow patterns.

Description and assessment: Torreya State Park has among the highest and steepest bluffs in Florida. Two examples are located at Rock Bluff and at Aspalaga Landing. These steep, calcareous slopes are in a relatively intact condition in the park, although those on the Aspalaga tract are degraded by the abundance of exotic Japanese climbing fern.



General management measures: Management of the bluff community will primarily involve minimizing erosion due to visitor foot traffic. This can be achieved by confining visitors to established trails and avoiding highly erodible areas. Bluffs on the park have also been impacted by the spread of Japanese climbing fern, which tends to grow over native fern and plant species. It is hoped that a biocontrol agent can be found to aid in the management of this abundant pest plant. The Rock Bluff area is also being seriously impacted by feral hogs.

SANDHILL

Desired future condition: A mature sandhill community is typically composed of widely scattered, uneven aged longleaf pines at a density of about 50-80 individuals per acre. Beneath the pines, occur small trees and shrubs such as turkey oak, bluejack oak, sand post oak, sand live oak and sparkleberry. In some old growth conditions, sand post oaks are commonly 150-200 years old, and some turkey oaks are over 100 years old. A diverse array of groundcover species exists, including wiregrass, broomsedge, lopsided indiagrass, prickly pear, gopher apple, blazing star. Herbaceous cover is expected to be 80 percent or greater, and less than 3 feet in height.

Offsite sand pine trees (Sweetwater tract) should be eliminated. In addition, native offsite species such as laurel oak, water oak and sweetgum should be uncommon, and occur primarily in the ecotone between sandhill and slope forest. Non-native herbaceous species and grasses should not be present. The Optimal Fire Return Interval for this community is 1-3 years.

Description and assessment: With the acquisition of the Sweetwater tract, Torreya gained a large measure of habitat that was once a longleaf pine-wiregrass sandhill community. Unlike the upland pine forest of the original park, sandhill is characterized by coarse, well-drained, sandy soils dominated by wiregrass, sparkleberry, turkey oaks and widely scattered longleaf pines. Regrettably, almost all of the uplands of the Sweetwater tract were converted to sand pine plantation about 20 years ago. However, some of the native groundcover species survive in isolated areas on the site and an active community restoration program is underway.

General management measures: The entire true sandhill habitat on Torreya was acquired with the recent purchase of the Sweetwater tract. Virtually all of this community was converted to sand pine plantation prior to state acquisition in 2002. To date, 500 acres of the Sweetwater tract have now been logged, replanted in wiregrass and are being actively restored. Due to limited availability of local-source wiregrass seed, and the risk of off-site hardwood invasion onto a “fallow” site, restoration is proceeding gradually and will require decades to complete. A detailed restoration plan for the Sweetwater tract has been developed.

SLOPE FOREST

Desired future condition: Slope forest is a mesic, climax community, with a closed canopy of deciduous and evergreen trees that occurs on areas with steep slopes. Soil characteristics vary from cool, moist conditions with substantial organic component to nearly xeric, sandy soils at higher elevations. Species composition will be very similar to upland hardwood forest. Typical canopy species may include southern magnolia, mockernut hickory, sweetgum, live oak, spruce pine and American beech. Diverse understory composition may include smaller trees such as flowering dogwood, redbud, American holly and horse sugar. Groundcover will typically consist of a layer of leaf litter with sparsely populated shade tolerant species including spring ephemerals. Species may include greenbrier, switchcane, Christmas fern, trilliums and partridgeberry.

Description and assessment: Slope forests have many of the same characteristics and species composition as upland hardwood forests but differ primarily in the inclined aspect of the terrain. Two of the more endangered plant species in the park, Florida torreyia and Florida yew, occur mainly in this community. Slope forest is known for having one of the highest biodiversity levels of any natural community in the state.

Except for degree of slope, it is often quite difficult to make delineations between this community and upland hardwood forest at this park. Both are characterized by a well-developed canopy of mixed hardwoods, and a resulting cool, moist microclimate supporting many species that typically occur in the Piedmont and Appalachian Mountains.

Slope forest is listed by FNAI as an S2 community that is “imperiled in Florida because of rarity or extreme vulnerability to extinction due to some natural or man-made factor.”

At the park, this community also contains numerous steephead streams. These drainages differ from more creeks that are typical in that they originate directly from groundwater flowing from an impermeable boundary strata at the head of a ravine. Thus, waters of a steephead are similar to springs, and are not directly fed by surface water runoff. Steephead ravines support a remarkable faunal and floral diversity and are highly vulnerable to erosion.

Overall, the slope communities seem to be in good condition, but the continued decline of the Florida torreyia tree suggests that something may be out of balance.

General management measures: Slope forest occurs adjacent to upland pine and sandhill habitats so will be impacted to a limited extent by prescribed fire. However, the moist conditions of the hardwood litter tend to minimize the spread of fire. Torreyia

trees that are being produced under nursery conditions have been out-planted in the park's slope forests. Due to their sandy soils and steep grades, this community is extremely vulnerable to erosion and extra care must be exercised when developing foot trail systems that traverse this community type.

UPLAND HARDWOOD FOREST

Desired future condition: This community is a mature, closed canopy hardwood forest typically occurring on slopes and rolling hills with generally mesic conditions. Overstory tree species will consist of southern magnolia, sweetgum, live oak, laurel oak, Florida maple, white oak, and swamp chestnut oak and American beech. Understory species will include trees and shrubs such as American holly, flowering dogwood, redbud, red bay, horse sugar, and beautyberry. Ground cover is comprised of shade tolerant herbaceous species, sedges and vines.

Description and assessment: At Torreya, this community is generally located between the upland pine and slope forest natural communities. In some areas, the ecotones are quite sharp, in others, they are wider and more obscure. At this park, upland hardwood often grades into slope forest, upland pine forest, and upland mixed forest.

General management measures: Hardwood forests occur on park uplands adjacent to pyrogenic habitats, but hardwood communities generally do not burn due to lack of fine fuel and moist conditions on the substrate. The only management necessary is periodic removal of exotic plants and control of park visitor impacts.

UPLAND PINE FOREST

Desired future condition: In this type of habitat, the dominant overstory tree species is normally longleaf pine. Shortleaf pine may also be interspersed or replace longleaf on some sites in the panhandle. Herbaceous cover is less than 3 feet in height and is comparable to sandhill, but may have a higher shrub and wiregrass density due to better soil fertility, and more moist soil conditions. In addition to groundcover and pine characteristics noted previously, mature hardwood trees are expected to be scattered throughout, usually southern red oak, post oak, blackjack oak, sand post oak, mockernut hickory, flowering dogwood and sassafras. In old growth conditions, oak trees and hickories are commonly 150-200 years old. The Optimal Fire Return Interval for this community is 2-5 years.

Description and assessment: Considerable debate has occurred over the years as to how best to classify the "high pine," longleaf pine - wiregrass, areas of the park. Actually, both upland pine forest and sandhill communities occur at Torreya. Upland pine habitat is a longleaf pine and wiregrass savanna on clay soils which occurs upslope (north of) the Cody Scarp whereas sandhill occurs below the scarp and develops on coarse, sandy soils. The upland pine community generally occupies ridge tops and higher elevations of the park. In fact, most of the higher uplands and ridges of the park

are thought to have been originally dominated by longleaf pine and wiregrass habitat. Land clearing and farming over much of the property prior to state ownership, combined with logging and prolonged periods of fire exclusion, have greatly diminished the extent of upland pine acreage - a large portion of which is now mapped as upland hardwood forest. Lightered stumps and evidence of past turpentine operations are scattered in many upland areas now dominated by mixed hardwoods and loblolly pine.

Most of the original longleaf were apparently logged out prior to state ownership; the oldest specimens located by increment coring are just under 100 years of age (longleaf can live over 450 years). Specimens of post oak have recently been found to be the oldest trees in this community; increment cores are showing trees well in excess of 100 years of age.

An active high pine restoration program is underway at the park, increasing the use of volunteers, and assistance of The Nature Conservancy (TNC) staff from the adjacent Apalachicola Bluffs and Ravines Preserve. The first prescribed burn in the park was conducted by staff in 1971, with the burning program beginning in earnest in the early to mid 1980s. Different locations have been prioritized for ease of restoration, with areas containing significant native vegetation being targeted before areas in poorer condition. Areas least likely to be recoverable are old-field sites where loblolly pines were killed in the 1980s by an outbreak of southern pine beetle (i.e., there is now insufficient fine fuel to carry fires).

General management measures: Upland pine communities in the CCC section of the park have now been burned for over 30 years and are in excellent condition, requiring little more than maintenance of frequent prescribed fire. Other upland pine habitats in the Rock Creek and Aspalaga tracts have been degraded by upslope expansion of laurel oak, water oak, sweetgum and other invasive hardwoods prior to state acquisition. In addition to burning these “newer” upland pine areas, active girdling and removal of off-site hardwoods is an on-going program on the park to promote wiregrass and other native groundcover species on the ridge tops.

BOTTOMLAND FOREST

Desired future condition: This is a low lying, mesic to hydric community prone to periodic flooding. The vegetation will consist of a mature closed canopy of deciduous and evergreen trees. Overstory species may consist of species such as sweetgum, sweetbay, loblolly bay, water oak, live oak, swamp chestnut oak, loblolly pine and spruce pine. Red maple and bald cypress may also be present. The understory may be open or dense. Understory species typically include wax myrtle, dwarf palmetto, and swamp dogwood. Presence of groundcover is variable and may consist of witchgrass and various sedges.

Description and assessment: This community is generally found in the low, flatter areas at the base of ravines and is associated with seepage streams. At Torreya, this community intergrades with steepheads, and often has affinities with baygall. Based on the dominant vegetation (loblolly bay, American beech, southern magnolia, sweetgum, and red maple), topography, soil characteristics, and overall character, it is best classified as bottomland forest.

General management measures: Due to mesic/hydric, conditions found in bottomland forests, this community does not burn. Primary management issues here consist of exotic animal and plant control. In this area, Japanese climbing fern, wild taro and Chinese privet occur and controlled to the extent possible. Feral hogs are also common in this habitat and should be removed by trained park staff according to DRP's policies whenever possible.

FLOODPLAIN FOREST

Desired future condition: This is a seasonally flooded, closed canopy, hardwood forest community that occurs on ridges or slight elevations within the floodplain of alluvial rivers. The typical overstory trees that are expected to be seen may include sycamore, cottonwood, overcup oak, water hickory, American elm, diamond-leaved oak, and red maple. Understory species may include swamp dogwood, willow species, and American hornbeam. Presence of groundcover is variable. Species such as river oats, switch cane, netted chain fern and other shade tolerant herbaceous species may be present.

Description and assessment: This natural community is located to the west of the main campground and at the Aspalaga tract. There is a rapid gradation from slope forest into this forest as it flattens out considerably and continues to grade into floodplain swamp toward the river. The area does contain a very small portion of bald cypress along the western park boundary, but the slight elevation and general characteristics still distinguish this area as floodplain forest.

General management measures: The above comments regarding bottomland forest also apply to floodplain forest. The two communities are adjacent and share many species and management issues. One significant constraint to management actions in "the elbow" west of the CCC section of the park is steep terrain and difficult access. The nearest road to this area is almost 1 mile to the east, thus this area is virtually an island of river-corridor forest situated between two steep bluffs.

FLOODPLAIN SWAMP

Desired future condition: This is a frequently or permanently flooded community in low-lying areas along streams and rivers. Soils will typically consist of a mixture of sand, organics and alluvial materials. The closed canopy is expected to be dominated by bald cypress but commonly includes tupelo species as well as water

hickory, red maple, and overcup oak. Trees bases are typically buttressed. Understory and groundcover are typically sparse.

Description and assessment: This area comprises the low areas bordering the Apalachicola River along the western sections of the park. Vegetatively it is very similar to floodplain forest but contains some exceptionally large bald cypress and has pools standing water much of the year. Many trees are buttressed and there are few groundcover species due to shading.

General management measures: Floodplain swamp habitat on *Torreya* was obtained via the purchase of the Neal “elbow” and Aspalaga tracts along the east bank of the Apalachicola River. Since the elbow has no road access, past logging activities was minimal and an excellent stand of bald cypress, gum, tupelo, water oak and other bottomland hardwoods remains. Given that this area may flood with up to ten feet of water in winter, it will remain nearly inaccessible. As above, management issues deal primarily with exotic plant and animal control.

ALLUVIAL STREAM

Desired future condition: As the park continues to restore upland habitats by removing planted pines and re-establishing wiregrass and longleaf pines, water quality and quantity is expected to continue to improve in streams that flow into the adjacent Apalachicola River. Park management must also ensure existing, and any new roads, trails and other improvements do not adversely affect park waterways from erosion and sediment runoff. Park management must also be vigilant against any new threats such as adjacent impoundments or agricultural activities that could impact park water quality.

Description and assessment: The Apalachicola River forms the western boundary of the park, and receives runoff from *Torreya*’s numerous seepage streams. The river is in relatively good condition, but is obviously impacted by the Jim Woodruff dam at Chattahoochee, and by urban and agricultural pollution from Georgia and Alabama.

The entire park’s many seepage streams flow in a westerly direction into the Apalachicola River. The adjacent slope forest and upland pine communities are largely in good condition, thus park streams are not heavily impacted by polluted runoff, or siltation. Since these streams support a diverse array of aquatic invertebrates, they have been used as water quality reference sites by the DEP and university researchers.

General management measures: Primary management measures for alluvial streams consist of monitoring nearby roads and trails for significant silt-contaminated runoff, and taking appropriate corrective actions. One example of

such action was the 2002 restoration of the Rock Creek clay pit. When this land was acquired by the state, severe clay-containing runoff was flowing downslope into the Rock Creek basin. By creating a system of berms and swales, and planting native vegetation, the erosion problem was eliminated.

SEEPAGE STREAM

Desired future condition: This community is characterized by narrow, relatively short perennial or intermittent stream formed by percolating water from adjacent uplands. The water color should be clear to slightly colored, with a slow flow rate and constant temperature. Bottom substrate will be typically sandy, but may include gravel or limestone. A diverse array of aquatic insect species should be present.

Description and assessment: These streams run throughout the park and are a very important part of the character of Torreya State Park. The streams are small, non-tannic, sandy bottomed, cool watercourses, with relatively sparse vegetation. They often disappear into the ground and resurface several meters downslope. The Sweetwater, Rock Creek and Aspalaga tracts contains numerous examples of seepage streams, largely in excellent condition.

General management measures: Torreya State Park achieved a very significant increase in this community type with the Sweetwater tract acquisition. Here a nearly undisturbed network of seepage streams (steephead streams) and associated intact slope forest exists. As Park Service management of this region continues, the community will be improved by elimination of water uptake by upslope sand pine plantation, control of surface erosion, and restoration of native groundcover in the adjacent sandhill community.

TERRESTRIAL CAVE

Desired future condition: Caves and cave biota are fragile resources, and are very vulnerable to human disturbance. Bat colonies, cave invertebrates and geological features are easily damaged, and unfortunately damage (vandalism or accidents) can be permanent. The caves on Torreya are very small, and do not offer any practical opportunity for park visitor use. For these reasons and for visitor safety considerations, these caves are closed to public visitation. They are not mapped on the park Natural Communities map.

Description and assessment: There are at least two known caves on the park large enough to accommodate human entry. Both are little-decorated (few speleothems) horizontal passages created by stream erosion. They are associated with other karst features on the northern part of the park. At present, cave features are intact and undamaged. Small numbers of southeastern bats (*Myotis austroriparius*) have been found in one of the caves. Other cave-like limestone features can be found

elsewhere on the park, but are too small to accommodate human entry.

General management measures: The caves on Torreya are not suitable for public visitation due to their very small size, and due to visitor safety considerations. The caves are in fact, too small and undeveloped geologically to offer a satisfactory visitor experience. Any roads, trails or camping areas planned near the caves must be designed to avoid impacts to the caves, and not inadvertently promote visitor impacts to the caves. Cave gating can be an option, but may create undesirable aesthetic impacts and wildlife access problems.

RUDERAL

Desired future condition: Ruderal areas will be kept mostly mowed and cleared of woody debris, litter and exotic plant species. Although not pristine, they provide habitat for gopher tortoise, gray squirrels, white-tailed deer and other “edge” wildlife species.

Description and assessment: These areas are located along roadsides and are generally disturbed areas that are succeeding toward a natural community. A former clay pit existed on the southeast corner of the Rock Creek tract. It was restored to upland pine with assistance from the Orange Hill Soil and Water Conservation District in 2003-2004 and is recovering well.

General management measures: General landscape maintenance, control of exotic plants, and prevention of erosion are management measures implemented in ruderal areas of the park.

DEVELOPED

Desired future condition: Developed areas on the park will be managed to minimize their impacts upon adjacent natural areas. The EPPC category I and II exotic plant species will be removed from all developed areas. Other management measures, particularly for any new Sweetwater and Aspalaga tract development include proper storm water management and development guidelines that are compatible with prescribed fire and natural community restoration in adjacent natural communities.

Description and assessment: These areas are located in areas such as campgrounds, roads, parking lots and facilities.

General management measures: Park staff will continue to control invasive plant species in developed areas of the park. Defensible space will be maintained around all structures and improvements present/created adjacent to upland pine and sandhills which are maintained by prescribed fire or could be impacted by wildfires.

Imperiled Species

Imperiled species are those that are (1) tracked by FNAI as critically imperiled (G1, S1) or imperiled (G2, S2); or (2) listed by the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC) or the FDACS as endangered, threatened or of special concern. As stated previously, Torreya State Park contains a large number of threatened and endangered species. This is due in part to the unique and very high biodiversity of the area. The park is presently known to support more than 90 species of plants and animals tracked by the Florida Natural Areas Inventory that are state-ranked as S1 or S2. A specific discussion of each of these species in this plan is not considered necessary because the natural systems management practiced by DRP promotes their survival. Perpetuation of the vast majority is provided for by “passive” management activities afforded by inclusion within the park boundary - protection from poaching, protection from over-collection, and preservation of habitats. Several, however, require active management efforts to persist such as prescribed burning, survey and monitoring, etc. A few selected species in need of special management consideration are discussed briefly below.

One of the most important endangered species on the property is the Florida torrey tree (*Torreya taxifolia*) - the namesake of the park. This species, which occurs only along a 20- mile segment of the Apalachicola River, has been under catastrophic decline since the 1950s. Within ten years, the entire population was reduced from a major canopy component to a situation where virtually no mature, seed-producing specimens remained. The species exists in the wild only as sprouts and saplings regenerated from surviving rootstock. Extinction of the torrey tree is highly likely unless specific management measures can be developed to deal the causes of the specie’s decline. It appears the Torreya tree has been severely impacted by a fungal canker (Smith et al in press). Also virtually all of the torreyas on the park are severely damaged by white-tailed deer, both from antler rubbing and browsing. The trees are often girdled as a result, resulting in the death of the main stem. It is estimated that approximately four percent of the population is lost yearly (Schwartz and Herman, 1996).

Although some surveying/mapping for torrey trees has occurred in the park, this effort is not complete. Provided staff time or volunteer assistance, it is a goal to complete a park survey for the torrey over the next five years. Actual active efforts to protect the trees and arrest the canker (spraying with fungicide, etc.) have not yet been implemented, because an effective regime to do so has not yet been identified - despite active efforts by the scientific community. If such a regime is developed within the duration of this plan, efforts to implement it will be pursued. In cooperation with the Atlanta Botanical Garden, nursery-raised torrey seedlings may be re-introduced on appropriate habitats in the park.

At present, collaboration between the Florida Park Service and other biologists is exploring the possibility of establishing test plots that would implement several management strategies on a small sample of torreya trees in order to measure response.

With the recent acquisition of the Sweetwater tract, the park now contains nearly all of the known range of the endangered Apalachicola rosemary (*Conradina glabra*). Distribution of the plant is now being mapped and monitored via transects using GPS. Another study is ongoing to ensure sandhill restoration activities will not adversely impact this rare plant species.

The Florida yew (*Taxus floridana*) is listed by the FDACS as endangered. It is closely related to the torreya tree, and is similar in appearance. Its distribution is also similar to the torreya tree, generally on the lower portions of the slopes in the ravines of the park.

Both the yew and torreya trees are being severely impacted by deer rubbing. Deer have effectively girdled the majority of torreya and yew trees on the park. Fencing and netting is being employed to attempt to protect these rare tree species from deer damage. Additionally, yews have been shown to be in decline as adult mortality exceeds recruitment (Redmond & Winn 2010). A study has begun to determine management measures that can be employed to improve recruitment.

Several of the rare plant species in the park are either directly or indirectly dependent on frequent fire for their continued existence - and benefit from proactive prescribed burning. Such species that occur in upland pine include Apalachicola wild indigo and toothed savory. It is also very likely that long-term reproductive success of several plant species in the park, such as Florida spiny-pod, Florida mountain mint, and orange azalea, depend on maintaining ecotonal areas between upland pine and slope forests/ upland hardwood forests. In northern states, fire is now known to play a role in maintenance of stands of mountain laurel; whether or not this is the case at the park is presently unknown.

Bald eagles are regularly seen in the park. There is one nest within the park that is used by a mated pair. Nesting success is monitored and disturbance near the nest area is managed within federal regulations. The bald eagle was recently delisted by the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission

Gopher tortoises can be found in the upland pine and sandhill areas of the park and are monitored in conjunction with prescribed burning, upon which they are dependent. The exact number of tortoises is not known at this time, but the ongoing restoration of longleaf pine/wiregrass habitats positively impacts the populations

of the tortoise. Other turtle, snake and amphibian populations are undoubtedly being impacted by feral hog predation (Jolley, 2007).

Sherman's fox squirrel occurs within the park, but the species' numbers are unknown. Because their primary habitat is upland pine and sandhill, they too are dependent on an active burn program. A sustainable population of fox squirrels would likely require significantly more habitat than is currently protected in the park and nearby TNC preserve lands. As sandhill and upland pine habitats are restored on the Sweetwater and Aspalaga tracts respectively, significant additional habitat will become available for fox squirrels, gopher tortoises and other rare Florida upland wildlife species.

Table 2 contains a list of all known imperiled species within the park and identifies their status as defined by various entities. It also identifies the types of management actions that are currently being taken by DRP staff or others, and identifies the current level of monitoring effort. The codes used under the column headings for management actions and monitoring level are defined following the table. Explanations for federal and state status as well as FNAI global and state rank are provided in Addendum 6.

Table 2: Imperiled Species List						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FFWCC	USFWS	FDACS	FNAI		
PLANTS						
Canada honewort <i>Cryptotaenia canadensis</i>			LE	G5,S1		Tier 1
Heartleaf <i>Hexastylis arifolia</i>			LT	G5,S1		Tier 1
Florida flame azalea <i>Rhododendrum austrinum</i>			LE	G5,S3	1	Tier 1
Apalachicola wild indigo <i>Baptisia megacarpa</i>			LT	G2,S2	1	Tier 1
Toothed savory <i>Calamintha dentata</i>			LT	G3,S3	1	Tier 1
Apalachicola river aster <i>Aster fragilis</i> var. <i>brachypholis</i>				G4G5, S1		Tier 1
Wild hydrangea <i>Hydrangea arborescens</i>			LE	G5,S1		Tier 1

Table 2: Imperiled Species List						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FFWCC	USFWS	FDACS	FNAI		
Ashe's magnolia <i>Magnolia ashei</i>			LE	G2,S2		Tier 1
Pyramid magnolia <i>Magnolia pyramidata</i>			LE	G4,S2		Tier 1
White baneberry <i>Actaea pachypoda</i>			LT	G5,S1		Tier 1
Marianna columbine <i>Aquilegia canadensis</i>			LE	G5T1Q S1		Tier 1
Buckthorn bumelia <i>Sideroxylon lycoides</i>			LE	G5, S2		Tier 1
American bladdernut <i>Staphylea trifolia</i>			LE	G5,S1		Tier 1
Florida yew <i>Taxus floridana</i>			LE	G2,S2	14	Tier 2
Torreya tree <i>Torreya taxifolia</i>			LE	G1,S1	3,13, 14	Tier 4
Baltzell's sedge <i>Carex baltzellii</i>			LE	G3,S3		Tier 1
Lanceleaf wakerobin <i>Trillium lancifolium</i>			LE	G3,S2		Tier 1
Green adder's-mouth <i>Malaxis unifolia</i>			LT	G5,S3		Tier 1
Croomia <i>Croomia pauciflora</i>			LE	G5,S2		Tier 1
Incised Groove-bur <i>Agrimonia incisa</i>			LE	G3,S2		Tier 1
Sweet-shrub <i>Calycanthus floridus</i>		LT		G5, S2		Tier 1
Florida Spiny-pod <i>Matela floridana</i>			LE	G2,S2	1	Tier 1
Needle palm <i>Rhapidophyllum hystrix</i>			LS			Tier 1
Bay star-vine <i>Schisandra glabra</i>			LT	G3,S2		Tier 1
Bladdernut <i>Staphylea trifolia</i>			LE	G5, S1		Tier 1
Silky camellia <i>Stewartia malacodendron</i>			LE	G4,S3		Tier 1

Table 2: Imperiled Species List						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FFWCC	USFWS	FDACS	FNAI		
Crane-fly orchid <i>Tipularia discolor</i>			LT			Tier 1
False hellebore <i>Veratrum woodii</i>			LE	G5,S2		Tier 1
Royal fern <i>Osmunda regalis</i>			LS			Tier 1
Apalachicola rosemary <i>Conradina glabra</i>		E	LE	G1,S1	14	Tier 3
Wild comphrey <i>Cynoglossum virginianum</i>			LE	G5,S2	1	Tier 1
Eastern leatherwood <i>Dirca palustris</i>			LE	G4,S2		Tier 1
Trailing arbutus <i>Epigaea repens</i>			LE	G5,S2		Tier 1
Trout lily <i>Erythronium umbilicatum</i>			LE	G5,S2		Tier 1
Burningbush <i>Euonymus atropurpureus</i>			LE	G5,S2		Tier 1
Wood spurge <i>Euphorbia commutata</i>			LE	G5,S2		Tier 1
Godfrey's swamp privet <i>Forestiera godfreyi</i>			LE	G2,S2		Tier 1
Downy rattlesnake plantain <i>Goodyera pubescens</i>			LE	G5,S1		Tier 1
Liverleaf <i>Hepatica nobilis</i>			LE	G5,S1		Tier 1
Mountain laurel <i>Kalmia latifolia</i>			LT	G5,S3		Tier 1
Gholson's blazing star <i>Liatris gholsoni</i>			LE	G1,S1	1	Tier 1
Carolina lily <i>Lilium michauxii</i>			LE	G4,S5, S2		Tier 1
Curtiss' loosestrife <i>Lythrum curtissii</i>			LE	G2,S2		Tier 1
Alabama milkvine <i>Matelea alabamensis</i>			LE	G2,S2		Tier 1
Allegheny spurge <i>Pachysandra procumbens</i>			LE	G4,G5, S1		Tier 1

Table 2: Imperiled Species List						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FFWCC	USFWS	FDACS	FNAI		
Buckthorn <i>Sideroxylon lycioides</i>			LE	G5,S2		Tier 1
Rue-anemone <i>Thalictrum thalictroides</i>			LE	G5,S1		Tier 1
Halberd-leaved yellow violet <i>Viola hastada</i>			LE	G5,S1		Tier 1
Blunt-lobed cliff fern <i>Woodsia obtusa</i>				G5,S1		Tier 1
INVERTEBRATES						
Unbanded agrypnia caddisfly <i>Agrypnia vestita</i>				G5,S1		Tier 1
Fat threeridge <i>Amblema neislerii</i>			E			Tier 1
Pepper and salt skipper <i>Amblyscirtes hegon</i>				G2,S2		Tier 1
Stonefly <i>Amphinemura nigritta</i>				G5,S1		Tier 1
Seminole crescent <i>Anthanassa texana seminole</i>				G5,S2		Tier 1
Fire-back crayfish <i>Cambarus pyronotus</i>				G2,S2 S3		Tier 1
Grisatra underwing <i>Catocala grisatra</i>				G1G3, S1		Tier 1
Shining ball scarab beetle <i>Ceratocanthus aeneus</i>				G2G3, S2		Tier 1
Little mountain jumping spider <i>Chinattus parvulus</i>				G5,S1		Tier 1
Say's spiketail <i>Cordulegaster sayi</i>				G2,S2		Tier 1
Torrey trap-door spider <i>Cyclostoma torreya</i>				GNR, S2		Tier 1
Stonefly <i>Eccopectura xanthenes</i>				G5,S2		Tier 1
Eastern ringtail <i>Erpetogomphus designates</i>				G5,S1		Tier 1
Mayfly <i>Isonychia sicca</i>				G5,S1		Tier 1

Table 2: Imperiled Species List						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FFWCC	USFWS	FDACS	FNAI		
Stonefly <i>Leuctra ferruginea</i>				G5,S1, S2		Tier 1
Cofaqui skipper <i>Megathymus cofaqui</i>				G3,G4, S2,S4		Tier 1
Apalachicola grasshopper <i>Melanoplus apalachicolae</i>				G1,S1		Tier 1
Cartwright mycotrupes beetle <i>Mycotrupes cartwrighti</i>				GNR,S 2		Tier 1
Trapdoor spider <i>Myrmekiaphila torreya</i>				G2G3, S2		Tier 1
Mourning cloak <i>Nymphalis antiopa</i>				G5,S2		Tier 1
Smooth gopher tortoise onthophagus beetle <i>Onthophagus polyphemi sparsisetosus</i>				GNRT, NR,S1 S2		Tier 1
Pescador's bottle-cased caddisfly <i>Oxythira pescadori</i>				G1,G3, S3		Tier 1
Floodplain phanaeus scarab beetle <i>Phanaeus triangularis</i>				G5,S1, S2		Tier 1
Workman's jumping spider <i>Phidippus workmani</i>				G2,S2		Tier 1
Coral hairstreak <i>Satyrium titus</i>				G5,S1		Tier 1
Rusty cebrionid beetle <i>Selonodon ferrugineus</i>				G1,G2, S1,S2		Tier 1
Gray petaltail <i>Tachopteryx thoreyi</i>				GNR, S2,S3		Tier 1
Black-headed pleasing fungus beetle <i>Triplax frontalis</i>				GNR, S2,S3		Tier 1
Red-winged pleasing fungus beetle <i>Tritoma sanguinipennis</i>				GNR, S2,S3		Tier 1
FISH						

Table 2: Imperiled Species List						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FFWCC	USFWS	FDACS	FNAI		
Gulf sturgeon <i>Acipenser oxyrinchus desotoi</i>	T	T		G3,T2, S2		Tier 1
Bluestripe shiner <i>Cyprinella callitaenia</i>				G2,G3, S2		Tier 1
REPTILES						
American alligator <i>Alligator mississippiensis</i>	LS	T(S/A)			8	Tier 1
Gopher tortoise <i>Gopherus polyphemus</i>	LS				1	Tier 2
Barbour's map turtle <i>Graptemys barbouri</i>	LS				8	Tier 1
Alligator snapping turtle <i>Macrolemys temminicki</i>	LS				8	Tier 1
Suwannee cooter <i>Pseudemys concinna suwanniensis</i>	LS				8	Tier 1
BIRDS						
Little blue heron <i>Egretta caerulea</i>	LS					Tier 1
Snowy egret <i>Egretta thula</i>	LS					Tier 1
Swallow-tailed kite <i>Elanoides forficatus</i>	LS				1	Tier 1
Tricolored heron <i>Egretta tricolor</i>	LS					Tier 1
Worm-eating warbler <i>Helminthos vermivorus</i>				G5,S1		Tier 1
Louisiana waterthrush <i>Seiurus motacilla</i>				G5,S1		Tier 1
American redstart <i>Setophaga ruticilla</i>				G5,S2		Tier 1
MAMMALS						
Sherman's fox squirrel <i>Sciurus niger shermani</i>	LS				1	Tier 2
Florida black bear <i>Ursus americanus floridanus</i>	LT			G5,T2, S2	1	Tier 1

Management Actions:

1. Prescribed Fire
2. Exotic Plant Removal
3. Population Translocation/ Augmentation/ Restocking
4. Hydrological Maintenance/ Restoration
5. Nest Boxes/ Artificial Cavities
6. Hardwood Removal
7. Mechanical Treatment
8. Predator Control
9. Erosion Control
10. Protection from visitor impacts (establish buffers)/law enforcement
11. Decoys (shorebirds)
12. Vegetation planting
13. Outreach and Education
14. Other

Monitoring Level:

- | | |
|---------------|--|
| Tier 1 | Non-Targeted Observation/Documentation: includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species-specific searches). Documentation may be in the form of <i>Wildlife Observation Forms</i> , or other district specific methods used to communicate observations. |
| Tier 2 | Targeted Presence/Absence: includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species. |
| Tier 3 | Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling. |
| Tier 4 | Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration. |
| Tier 5 | Other: may include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species. |

Detailed management goals, objectives and actions for imperiled species in this park are discussed in the Resource Management Program section of this component and the Implementation Component of this plan.

Exotic Species

Exotic species are plants or animals not native to Florida. Invasive exotic species are able to out-compete, displace or destroy native species and their habitats, often because they have been released from the natural controls of their native range, such as diseases, predatory insects, etc. If left unchecked, invasive exotic plants and

animals alter the character, productivity and conservation values of the natural areas they invade.

Torrey State Park is located in a relatively rural and remote part of Florida, and has not yet been severely impacted by a large number of exotic plant species. The most abundant exotic plant on the park is Japanese climbing fern. It is a dominant groundcover species on over 1,000 acres of park lands in primarily the bottomland forest and swamp bordering the Apalachicola River. The species was first recorded in Florida at Aspalaga Landing in 1932 (Nelson 2000). A biological control method may be the only practical way to manage this widespread and abundant non-native plant. Wild taro also occurs in the river floodplain, and has been treated using contracted spray crews. Other exotic plant species occur sporadically on the park as individuals or clumps, and are eliminated with herbicide when located. Patches of cogongrass (*Imperata cylindrica*) occur near the park, and must be treated with herbicide immediately if the plant is found on park property.

Table 3 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive, exotic plant species found within the park (FLEPPC, 2009). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone
Japanese climbing fern <i>Lygogium japonicum</i>	I	4	TY Y, TY A24
Wild taro <i>Colocasia esculenta</i>	I	3	TY Y, TY A24
Mimosa <i>Albizia julibrissin</i>	I	1	Ruderal areas
Chinese privet <i>Ligustrum sinense</i>	I	1	TY Y

Distribution Categories:

- 0 No current infestation: All known sites have been treated and no plants are currently evident.
- 1 Single plant or clump: One individual plant or one small clump of a single species.
- 2 Scattered plants or clumps: Multiple individual plants or small clumps of a single species scattered within the gross area infested.
- 3 Scattered dense patches: Dense patches of a single species scattered within the gross area infested.
- 4 Dominant cover: Multiple plants or clumps of a single species that occupy a majority of the gross area infested.
- 5 Dense monoculture: Generally, a dense stand of a single dominant species that not only occupies more than a majority of the gross area infested, but also covers/excludes other plants.
- 6 Linearly scattered: Plants or clumps of a single species generally scattered along a linear feature, such as a road, trail, property line, ditch, ridge, slough, etc. within the gross area infested.

Exotic animal species include non-native wildlife species, free ranging domesticated pets or livestock, and feral animals. Because of the negative impacts to natural systems attributed to exotic animals, DRP actively removes exotic animals from state parks, with priority being given to those species causing the greatest ecological damage.

In some cases, native wildlife may also pose management problems or nuisances within state parks. A nuisance animal is an individual native animal whose presence or activities create special management problems. Examples of animal species from which nuisance cases may arise include raccoons, venomous snakes and alligators that are in public areas. Nuisance animals are dealt with on a case-by-case basis.

Although a native mammal, white-tailed deer are abundant on Torreya State Park and are having a significant negative impact on torrey trees, Florida yew, and possibly other imperiled plant species. Over 50 percent of the remaining torrey trees on the park show significant damage from deer browse and antler rubbing (USFWS, 2010). Due to the loss of deer mortality formerly caused by Native Americans, Florida panther, red wolf and screw-worms, remaining mortality factors affecting the park deer population are few. For these reasons, the park service will investigate management strategies and explore potential solutions to mitigate deer damage to imperiled plant species.

Feral hogs are Torreya's most significant exotic animal problem. In 2004, the park biologist, with assistance from USDA Wildlife Services, removed over 60 hogs from

the Sweetwater tract. At present, it appears the Sweetwater population has been significantly reduced. Continued monitoring of steephead streams on the Sweetwater tract currently shows no rooting damage.

Feral hogs also occur in the floodplain forest and slope forest both at Aspalaga tract and the western part of the Old Park (the “Elbow”). In 2009, 62 hogs were removed from the elbow area. The lowland habitats along the Apalachicola will require continual maintenance control, due to re-colonization by hogs from both north and south of the park in the riparian corridor. Hogs use park lands as “escape cover,” and frequently move on to adjacent private lands having deer food plots or feed on corn discharged from deer feeders in the fall and winter.

Armadillos, feral cats and dogs are handled on an individual, case-by-case basis at Torreya State Park.

Detailed management goals, objectives and actions for management of invasive exotic plants and exotic and nuisance animals are discussed in the Resource Management Program section of this component.

Special Natural Features

The 1997 Preservation 2000 Act Study, Biodiversity Conservation Analysis (Cox et al., 1997) includes a conservation analysis of major vegetation types in Florida (based on a classification by Davis, 1967). For 22 vegetation types under the system used, the report summarizes data on the state’s original acres, remaining acres and acres in publicly managed areas. It is particularly noteworthy that of those vegetation types, “upland hardwood forest” (which, at this park, includes slope forest and upland hardwood forest) is the type that has been most affected by land use conversions (only 16 percent of the original remains) *and* is the least protected under public ownership (only three percent of the original). In this light, the upland hardwood forest/ slope forest complex at Torreya is extremely significant for preservation of the state’s biodiversity. Because these two communities and others in the park support a large number of endemics, near-endemics and species near the southern limits of their ranges in the U.S., the park is similarly significant on a national level. It was designated a National Natural Landmark in 1977.

There are numerous special natural features in this park. One of the most outstanding features of the park is the ravines and slopes that harbor much of its rich and unique biological diversity. This area harbors the greatest number of rare and imperiled species of any area in Florida (Blaustein 2008). Two particularly noteworthy species, the Florida yew and the Florida torreya are relic floras from the Tertiary period.

The slope forest and the near pristine Rock Creek seepage stream system with its steepheads are two highly unusual natural communities found in this park. Slope forest is not found in any other region of Florida. The biological diversity of steepheads and slope forest is quite impressive.

The Apalachicola River is another special natural feature. The Apalachicola-Flint-Chattahoochee river system has the greatest total length and average flow, as well as the largest drainage basin, of any river system in Florida.

Cultural Resources

This section addresses the cultural resources present in Torreya State Park that may include archaeological sites, historic buildings and structures, cultural landscapes and collections. The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places.

Addendum 7 contains the management procedures for archaeological and historical sites and properties on state-owned or controlled properties, the criteria used for evaluating eligibility for listing in the National Register of Historic Places and the Secretary of Interior's definitions for the various preservation treatments (restoration, rehabilitation, stabilization and preservation). For the purposes of this plan, significant archaeological site, significant structure and significant landscape means those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

Condition Assessment

Evaluating the condition of historic structures and landscapes is accomplished using a three-part evaluation scale, expressed as good, fair and poor. These terms describe the present condition, rather than comparing what exists to the ideal condition. Good describes a condition of structural stability and physical wholeness, where no obvious deterioration other than normal occurs. Fair describes a condition in which there is a discernible decline in condition between inspections, and the wholeness or physical integrity is and continues to be threatened by factors other than normal wear. A fair assessment is usually cause for concern. Poor describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action is needed to reestablish physical stability.

Level of Significance

Applying the criteria for listing in the National Register of Historic Places involves the use of contexts as well as an evaluation of integrity of the site. Every cultural

resource's significance derives from historical, architectural or archaeological contexts. Evaluation will result in a designation of NRL (National Register or National Landmark Listed or located in an NR district), NR (National Register eligible), NE (not evaluated) or NS (not significant) as indicated in the table at the end of this section.

For collections, there are no criteria for use in determining the significance of collections or archival material. Usually, significance of a collection is based on what or whom it may represent. For instance, a collection of furniture from a single family and a particular era in connection with a significant historic site would be considered highly significant. In the same way, a high quality collection of artifacts from a significant archaeological site would be of important significance. A large herbarium collected from a specific park over many decades could be valuable to resource management efforts. Archival records are most significant as a research source. Any records depicting critical events in the park's history, including construction and resource management efforts, would all be significant. The following is a summary of the FMSF inventory. In addition, this inventory contains the evaluation of significance.

Pre-Historic and Historic Archaeological Sites

Desired future condition: All significant archaeological sites within the park that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: With the addition of the Aspalaga and Sweetwater tracts, Torreya State Park now contains 78-recorded prehistoric and historic archaeological sites and one historic cemetery. The park has not been systematically surveyed, nor has an archaeological predictive model been developed. The prehistoric archaeological resources range up to pre-Contact (before 1500 AD) Native American habitation sites. Within the park, there are several Native American campsites, middens and burial mounds. The historic archaeological resources range from Native American occupation through the early 20th century. These historic archaeological sites include the remains of two antebellum ferry landings and a warehouse complex, a territorial period federal roadway, and a series of Civil War artillery emplacements. A 19th -20th century cemetery for African Americans is also located within the park

Most aboriginal sites at Torreya are located on upland areas, especially on ridges. Whether this is explained by a general predisposition toward the highest area or possible site losses due to the extensive topsoil erosion in the Apalachicola bluffs area is unknown. Aboriginal cultural resources of the park include 8L000I5, called either the Mound near Rock Bluff Landing or the Nature Trail Mound. This burial mound with Weeden Island cultural affiliation is located near the Weeping Ridge

trail. The Torreya or Ranger site (8LI00008) is probably a village area, including middens, located near the manager's residence and extending nearly to the road to the campground. The site has yielded materials relating to the Weeden Island culture. An unnamed site, 8LI00009, is located within half a mile of the picnic area. Site 8LI00050 has been identified as a village but its cultural affiliation is unknown. In the older area of the park, 8LI00052 is located astride a service road. Farther north, along Rock Creek, portions of 8LI00053 may be found; the majority of that site was found on the northern bank of the creek. The nearby 8LI00054 is a midden with unknown cultural affiliation or physical connection.

The American Territorial period, 1821 - 1845, is the first period of documented sustained European - American activity for the immediate area. American attempts to tie East and West Florida together resulted in establishment of a federal road, which linked Rock Bluff Landing and points eastward. The road is a prominent feature of the northwest and northeast quarters of Section 20, easily followed to Rock Bluff Landing where the brick masonry foundation piers of the Cotton Warehouse (8LI00339), may be observed. Rock Bluff Landing itself is located on the east bank of the Apalachicola. A ferry linked it to Ocheese Landing, near where the Gregory house originally stood atop high pilings, which protected it from all but the most severe floods.

During the Civil War, 1861 - 1865, the Confederate Army fortified areas along the Apalachicola River system, which was navigable at least to Columbus, Georgia. The army established six artillery emplacements on the bluff below the present location of the Gregory house. The emplacements were linked by communications trenches and were locally supplied by road. The emplacements were originally recorded as a component of 8LI00014; they have since been assigned a different site number, 8LI00334.

It is not known when the Torreya Cemetery (8LI00530), was established, though local oral tradition has its period of greatest use after the Civil War until around the turn of the century. Evidence of many burials may be observed, and three grave markers remain.

Condition Assessment: The recorded Native American resources, including 8LI00005; -00008, -00009, -00050, -00052, -00053, and -00054 are in good condition. Site 8LI00062 has not been visited recently, though its condition was previously noted as fair. Although site 8LI00160 remains in fair condition, its location on the bank of the Apalachicola River leaves it endangered by floodwaters on at least an annual basis.

The federal road is in fair condition. It may be seen as a deep gash, often as much as three feet below the level of its embankments, dropping toward the Apalachicola

along the park's southwest boundary. The road has not been cleared in recent years, and the resultant root growth and layers of leaves have helped stabilize and keep it from further catastrophic erosion.

The resources of the Confederate gun emplacements (8LI00334) are generally in fair condition. However, the lowest emplacement is clearly endangered by the gradual undermining of the underlying riverbank. The other emplacements exhibit some slumping in wall areas, and occasional woody shrubs or trees have sprouted in the emplacement floors or walls. The emplacements have been drawn and documented over the past sixty years; therefore, the foundations of complete documentation are available should they be obliterated by a catastrophic flood season. The Confederate gun emplacement site was mapped in detail by the University of West Florida in 2009.

The Torreya cemetery is in fair condition. Work to stabilize the cemetery was begun in 1990 and largely completed by 1992; however, woody underbrush and small trees have begun invading the site again. The site was excluded from the park burn regimen.

Level of Significance: Of the 78 prehistoric and historic archaeological sites and 1 historic cemetery recorded in the park, three archeological sites are considered as eligible for the National Register. The Aspalaga Landing Mounds (GD00001) site was determined eligible for the National Register in 1983 by the state National Register Review Board who recommended its nomination. However, at the time, the site was under private ownership, and the owner objected to its listing, so the nomination did not proceed. The Aspalaga site is considered significant as one of the largest Late Swift Creek – Early Weeden Island village-mound complexes in northwest Florida with the potential to yield important data about the mortuary practices, social and community organization, and economic base of the Late Swift Creek – Early Weeden Island society.

The Confederate Gun Pits (8LI00334) along with Mound Near Rock Bluff Landing (8LI00005) and NN 8LI00009 were listed in the National Register of Historic Places as part of the nomination of Torreya State Park in 1972. A rectangular area in the park totaling nearly 300 acres was included in the nomination thus placing this entire part of the park on the National Register of Historic Places. The Confederate Gun Pits were considered significant as remnants of American Civil War earthworks and the Cotton Warehouse as ruins of an antebellum structure. The significance of these two sites lies in their potential to yield information about their uses, their method of construction and the period in which they were constructed.

Thirty-eight of the 79 recorded sites are considered as ineligible for the National Register (not significant or NS for the purposes of this plan) either by the recorder

or the SHPO. Most of them were deemed ineligible due to either a low density of artifacts or extensive damage to the sites. Twenty-seven of the sites and the historic cemetery have not been evaluated for significance.

General management measures: Treatment of the Cotton Warehouse and Ferry Master sites should focus on stabilization of the remains at the site. All other archaeological sites should receive preservation treatments, which are essentially monitoring and maintenance.

Historic Structures

Desired future condition: All significant historic structures and landscapes that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: There are 13 historic structures and 1 historic bridge listed in the Florida Master Site File. The historic structures on park property include the Gregory House and several buildings built by the Civilian Conservation Corps (CCC) during the 1930s. The single historic bridge recorded on park property is a stone bridge constructed by the CCC.

The Gregory House (8LI100014), an antebellum plantation dwelling, was re-sited and reconstructed by the Civilian Conservation Corps using many 20th century builders' techniques. It is considered a CCC-era resource for the purposes of this plan. The house was included in a listing of Torreya State Park on the National Register of Historic Places in 1972.

The largest cultural resource, both in terms of acreage and number of components, is the park itself, which has been open for public recreation and enjoyment since 1939. Torreya State Park is significant in the twentieth century history of Florida as one of nine elements of the New Deal-inspired Florida state park system and as one of the physical expressions of early twentieth century recreation planning. Until the 1930s, the State of Florida sponsored, owned or operated parks as monuments or memorial facilities. The components of this early, first system of state parks were the physical expression of the idea that Floridians, increasingly members of an urban population, needed and indeed possessed a right to communion with Nature. That idea, one of the intellectual underpinnings of the conservation movement of the Progressive Era (1890-1920), realized its most widespread expression during the peacetime administrations of Franklin Delano Roosevelt (1933-1941).

In July 1935, the CCC installed Company 4453 (Florida SP-6) at Torreya. Between 1935 and 1936, CCC barracks, support buildings and the road were constructed. In

1937, the CCC camps at Florida Caverns and Torreya State Parks were abandoned, resulting from reductions in the CCC program in Florida. In September 1939, a CCC side camp from Florida Caverns State Park (Florida SP-12) relocated to Torreya and completed its construction. The following CCC structures and buildings (a building is distinguished as being a habitable structure) survive within Torreya State Park:

- 8LI00336 the park shop. This was originally the camp mule barn and equipment storage building. An additional warehouse structure, whose origin is not documented, but which existed prior to the 1960s, is located nearby.
- 8LI00335 the camper registration building. Originally, the CCC barracks.
- 8LI00337 the cattle gap at the old park entrance.
- 8LI00338 the stone bridge across Rock Creek.

The remaining CCC or probable CCC resources include at least one refuse dump site near the Torreya Cemetery, the remains of one wooden bridge, a stone bridge on the Rock Creek tract, and two pump houses, serving the campground and the picnic area. In addition, the core of the park manager's residence, as well as its garage is attributable to CCC planners.

The resources attributable to the work of CCC enrollees or planners include several exclusively wood framed structures. Except for the barracks (8LI00335), and the manager's residence, framing is typically braced timber. The barracks is a typical balloon framed building derived from U.S. Army designs. Original siding material was wood weatherboard, and windows were wood framed. Site 8LI00336 has been altered during the sixty-odd years since its construction but continues to bear a strong familial resemblance to maintenance area structures in other New Deal Era parks. Finally, infrastructure elements of the original park remain. Sites 8LI00337, 8LI00338 consist of a pine plantation (decimated by a pine bark beetle infestation within the past decade), stone retaining walls, and a drainage system with multiple culverts. One of the culverts emanates from a concrete box for which the rails of the cattle guard form the porous lid, while others are fed from grated storm sewer openings along the old park drive. The stone bridge itself is a large concrete culvert structure veneered in lime rock masonry. Early infrastructure improvements at the then - new park appear to have been planned with a view toward land reclamation, reforestation and stabilization of eroding ridges on which public areas were sited.

The Gregory house, which was later recorded as 8LI00014, was dismantled and moved across the river to what was then the new Torreya State Park. Its reassembling and restoration were delayed by the disbanding of the CCC camp whose enrollees and Local Experienced Men (LEMs) had dismantled and barged it across the river to the new park. When a new camp was established, the house was re-sited and restored for possible use as a small hotel. The new site, on a stabilized

bluff well above the Apalachicola, constituted a complete change in orientation. Only the house's relationship to the river was retained by facing the main elevation toward it; however, this resulted in pivoting the structure so that what had faced east now faced west, and so on. The reassembled house lost its separate wood frame kitchen structure. It gained a side breezeway and subsidiary structure, intended for use as a restaurant kitchen and dining area. Inside the Gregory house, floors had to be replaced with new material; they were laid using recessed screws in place of traditional means. Plaster walls were reconstructed from new materials. It is possible that new window sashes and frames were also installed during the 1930s restoration. As noted, the bluff surface, a ridge, was stabilized with lime rock retaining walls and earth fill over a storm water drainage system. The walls and drainage system were continued into the nearby parking area.

Condition Assessment: The CCC resources vary in condition. When considering their conditions, it should be remembered that most such resources remain in daily service; therefore, some problems can be addressed in the course of ordinary maintenance. For example, the pump house serving the campground suffers through periods of apparent dilapidation, which are the products of local infestations of carpenter bees. Repairs are affected in the course of maintenance, and the building's structural integrity has not been compromised. It is in fair condition. However, failure of the pump housed in a similar structure at the picnic area necessitated dismantling of portions of the pump house to gain access and replace the mechanism. Much of the historic integrity of the structure appears to have been lost without documentation. It is in fair condition. The barracks or campground recreation building (8LI00335), presents certain problems. Although it has been adapted for different uses at various times in the past, structural integrity appears satisfactory. However, one change, refurbishing the exterior fabric by covering the wood weatherboard with asbestos shingle siding, complicated matters. In 2006, the asbestos siding was removed, and the exterior of the barracks building was repainted.

The Stone Bridge (8LI00338) has been stabilized during the past two years. This has consisted of sand bagging approach slopes and replenishing the soil of the approach road. However, the bridge remains in structurally poor condition. It is likely to continue deteriorating as the concrete center span and culvert separates from the lime rock masonry veneer walls, which contain much of the road fill and its approach areas. The bridge is not likely to disintegrate; however, it will continue losing structural and historical integrity in the future. The cattle guard (8LI00337) is in fair condition; however, the drainage system (the major publicly visible component) is in poor condition. The slopes that the system was intended to protect are eroding because of its deterioration. Woody vegetation that frequently invades the stone walls above the Stone Bridge is periodically removed by park staff.

The remains of two bridges in the Rock Creek tract, identified as the wood bridge and the stone bridge, both of which may be contemporary with the Stone Bridge (8LI00338), are in poor condition. Both are ruins, badly deteriorated and continuing to deteriorate. There may also be a major element of a culverted land drainage system, which appears to be related to the CCC resources in the original park in size, materials, scale and form. The conditions of these resources were declining at the time of acquisition of the addition, and their future prospects are uncertain.

The Park Manager's (Ranger residence) and garage are in fair condition. The residence has been extensively remodeled and is almost indecipherable as an early park building; the garage has had less attention and is in fair condition.

When Torrey State Park was first developed, it consisted in part of lands that had been logged heavily like so many other CCC parks of the 1930s. The Civilian Conservation Corps not only built parks, it also worked to save the land and to halt disastrous erosion, the bane of the South in the early 20th century. At Torrey, one major eroded area was the hillside overlooking Rock Creek. The hill was stabilized with a stone wall and terraced to permit improvement of a logging road. A system of drains and concrete culverts along and under the road ensured both its stability as a park drive and the stability of the hillside, now planted with pines, which drained onto it. The system began near the picnic area and fed into or was fed by at least three major culverts, including one, which was integral with the cattle gap. These directed water into Rock Creek, either upstream or downstream from the Stone Bridge, where a culvert was part of the structure. The decline of this water handling system through neglect, without considering the effects of its abandonment, has contributed to an increasingly serious erosion problem.

Finally, the Gregory house (8LI00014) represents the modern restoration technology and techniques of the 1930s. Other than replacing the roof and adding a forced air heating and air conditioning system, little has been done to the house since its restoration in the late 1930s. The site is stable but its integrity has been ignored. Small sinkholes have occasionally opened on the site; these are probably the results of clogged or broken storm sewers.

The condition of the Gregory house is fair. The house was reconstructed carefully, and it largely retains its 1930s integrity. Recently, grants were obtained to repair the roof and repaint the exterior of the house. In the matter of structural members, integrity is likely to be very high. There is considerable evidence of water leakage and plaster damage around many of the windows of the south and west elevations, and many of the other windows' sills and sashes are rotted beyond repair. When reassembled atop its bluff, the Gregory house was supplied with plumbing and electrical chases for both the first and second stories, and a modern (1940s) bathroom was installed between each of the pairs of bedrooms on either side of the

second story stair hall. The condition of these elements is not known.

The restored Gregory house was complemented by a brick "kitchen" structure, which was connected to the gable end of the house by a breezeway. The original kitchen had been situated at the rear of the house at its Ocheesee Landing site. Today the two upstairs rooms of the "kitchen" are used as the park office and a point of sale. The rooms beneath that level, below grade of the house site, are used as public rest room facilities. Plans for the restoration in the 1930s clearly show that considerable thought was given to making the present office and sales room into a kitchen grille and restaurant dining room. At that time, the house itself was thought to hold some promise as a country hotel.

Level of Significance: The Gregory House/Torrey State Park (8LI00014) was listed in the National Register of Historic Places in 1972 for its architectural significance as an outstanding remaining example of an antebellum Greek Revival style residential structure. It also is significant as an element of the Civilian Conservation Corps' plan for development of the park.

Most of the CCC structures within the park are considered eligible for the National Register. These include the warehouse, shop, barracks (camper registration building), the stone bridge, the cattle guard and the campground pump house. All of these structures were constructed as part of an overall plan for the park, possess a high degree of physical and architectural integrity and are good examples of the types of structures that were constructed by the CCC. The picnic area pump house, manager's cottage and garage were all built by the CCC as well; however, all of these buildings have been significantly altered over time, thus affecting their overall structural and architectural integrity and subsequently their eligibility for the National Register. Therefore, the west pump house, manager's cottage and garage should not be considered as eligible for the National Register (not significant or NS for the purposes of this plan).

There also are several historic structures built in the park in the 1950s and 1960s. These structures were not developed as part of an overall park plan, nor do they possess any distinguishing architectural or design features. Therefore, these buildings have been evaluated by BNCR staff as ineligible for the National Register (not significant or NS for the purposes of this plan).

General management measures: Many of the buildings in the park are used for day-to-day operations and used by park visitors. The Gregory House is used daily for interpretive tours of the structure and period furnishing and artifacts. The Gregory House kitchen is used as a combination administration building and gift shop. All the National Register listed and National Register eligible buildings along with the original park plan shall be managed using the Secretary of the Interior's

Standards for Rehabilitation. Rehabilitation acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.

Collections

Desired future condition: All historic, natural history and archaeological objects within the park that represent Florida's cultural periods, significant historic events or persons, or natural history specimens are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

The park maintains a collection of historic artifacts, largely housed within the Gregory house. The artifacts are intended to support the interpretive program of tours conducted in the Gregory house. These materials are detailed in the park's Scope of Collections statement. Most of the furniture and personal effects housed in the Gregory House were originally sourced from the State Archives, and are not original to the structure. The park also maintains a set of the original Civilian Conservation Corps blueprints from the 1930s park development era. They are stored in a map cabinet inside the Gregory House.

Condition Assessment: Collection objects in the Gregory house are generally in fair condition; however, excessive exposure to ultraviolet light has degraded the integrity of several objects in second story bedrooms. Collections are cataloged and are managed in accordance with current Florida Park Service procedures. The Gregory House is climate controlled and is maintained to prevent damage from pests and the elements. The house has an electronic security system to protect the artifact collection from theft.

Level of Significance: The Gregory House and its furnishings are an excellent representation of an antebellum southern plantation home. The house contains a wide array of furniture, fixtures, artifacts and personal property that convey a clear sense of what southern plantation life was like in the 1840s. The park's collection of CCC-era blueprints are a valuable reference for both management and researchers to understand the original design and facilities that were created in the 1930s during the initial stages of the creation of Torreya State Park.

General management measures: The park has developed a Scope of Collection Statement for the historic materials housed in the Gregory House. Climate, humidity and pest control measures need to be periodically evaluated for their adequacy in conserving collection objects, and recommendations for subsequent monitoring activities need to occur in order to ensure their conservation.

Detailed management goals, objectives and actions for the management of cultural resources in this park are discussed in the Cultural Resource Management Program

section of this component. Table 4 contains the name, reference number, culture or period, and brief description of all the cultural sites within the park that are listed in the Florida Master Site File. The table also summarizes each site's level of significance, existing condition and recommended management treatment. An explanation of the codes is provided following the table.

Table 4: Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Aspalaga Landing Mounds 8GD00001	Ft. Walton, A.D. 1000-1500; Swift Creek, 300 B.C.- A.D. 450 Swift Creek – Late Weeden Island, A.D. 450-1000	Archaeological Site	NR	Fair	P
Sycamore 8GD00013	Weeden Island, A.D. 450-1000	Archaeological Site	NE	NA	P
NN 8GD00015	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
NN 8GD00016	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
NN 8GD00018	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
Flat Creek North 8GD00023	Ft. Walton, A.D. 1000-1500	Archaeological Site	NE	NA	P
NN 8GD00088	Ft. Walton, A.D. 1000-1500	Archaeological Site	NE	NA	P
NN 8GD00143	Weeden Island, A.D. 450-1000	Archaeological Site	NE	NA	P
Steep Ravine 8GD00285	Indeterminate	Archaeological Site	NE	NA	P
Aspalaga Clay Pit 8GD00286	Indeterminate	Archaeological Site	NS	NA	P
Foghat 8GD00462	Prehistoric - Ceramic	Archaeological Site	NE	NA	P
Ferry Master 8GD00758	American – 20 th Century	Archaeological Site	NE	Fair	P

Table 4: Cultural Sites Listed in the Florida Master Site File

Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Mound Near Rock Bluff Landing 8LI 00005	Norwood Swift Creek, 300 B.C. -A.D. 450 Weeden Island, A.D. 450- 1000	Archaeological Site	NRL	Fair	P
Torrey Ranger 8LI00008	Weeden Island, A.D. 450- 1000	Archaeological Site	NE	Fair	P
NN 8LI00009	Prehistoric-Ceramic	Archaeological Site	NRL	NA	P
Gregory House/ Torrey State Park 8LI00014	c. 1830	Historic Structure	NRL	Fair	RH
Four Branches 8LI00015	Ft. Walton, A.D. 1000-1500	Archaeological Site	NE	NA	P
Eden 8LI00016	Weeden Island, A.D. 450- 1000	Archaeological Site	NS	NA	P
Doll's Leg 8LI00017	Weeden Island, A.D. 450- 1000	Archaeological Site	NS	NA	P
Brown Branch 8LI00018	Weeden Island, A.D. 450- 1000	Archaeological Site	NS	NA	P
Goat 8LI00019	Weeden Island, A.D. 450- 1000	Archaeological Site	NE	NA	P
Still 8LI00021	Prehistoric-Ceramic	Archaeological Site	NE	NA	P
Pipeline 8LI00022	Prehistoric-Aceramic	Archaeological Site	NE	NA	P
Grant 8LI00023	Prehistoric-Ceramic	Archaeological Site	NS	NA	P
West Branch 8LI00024	Weeden Island, A.D. 450- 1000	Archaeological Site	NS	NA	P
Burton 8LI00025	Weeden Island, A.D. 450- 1000	Archaeological Site	NS	NA	P
Honey Dew 8LI00026	Weeden Island, A.D. 450- 1000	Archaeological Site	NS	NA	P

Table 4: Cultural Sites Listed in the Florida Master Site File

Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Forbes Purchase 8LI00027	Weeden Island, A.D. 450-1000 Prehistoric-Aceramic Prehistoric unspecified	Archaeological Site	NS	NA	P
Sweetwater 8LI00028	Swift Creek, 300 B.C.-A.D. 450	Archaeological Site	NS	NA	P
Hogan's Bend 8LI00029	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
Drew's Prospect 8LI00030	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
Chapel Branch 8LI00031	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
William Dawson 8LI00033	Ft. Walton, A.D. 1000-1500	Archaeological Site	NS	NA	P
Upper Sweetwater Creek 8LI00034	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
Sweetwater Branch 8LI00035	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
Charlie Barrieum 8LI00036	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
Gordy Barber 8LI00037	American, 1821-Present	Archaeological Site	NS	NA	P
Hickory Stick 8LI00038	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
Porker Ridge 8LI00039	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
NN 8LI00045	Prehistoric - Aceramic	Archaeological Site	NS	NA	P
NN 8LI00046	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
NN 8LI00049	Prehistoric-Ceramic	Archaeological Site	NS	NA	P
NN 8LI00050	Prehistoric-Ceramic	Archaeological Site	NS	NA	P
NN 8LI00052	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P

Table 4: Cultural Sites Listed in the Florida Master Site File

Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
NN 8LI00053	Prehistoric-Ceramic	Archaeological Site	NE	NA	P
NN 8LI00054	Prehistoric-Ceramic	Archaeological Site	NS	NA	P
Three Little Pigs Road 8LI00060	Prehistoric-Ceramic	Archaeological Site	NE	NA	P
Mashman's Meadow 8LI00062	Weeden Island, A.D. 450-1000	Archaeological Site	NS	NA	P
Old Miles Place 8LI00073	American-1821-Present American-20 th Century	Archaeological Site	NE	NA	P
Hot Pines Prehistoric 8LI00137	Prehistoric-Aceramic	Archaeological Site	NE	NA	P
Orange Diamond 8LI00158	Prehistoric-Aceramic	Archaeological Site	NE	NA	P
Torrey Point 8LI00159	Prehistoric-Ceramic	Archaeological Site	NE	NA	P
Rock Bluff Landing 8LI00160	American-1821-Present Fort Walton, A.D. 1000-1500	Archaeological Site	NE	NA	P
Bethel Church 8LI00202	Prehistoric-Aceramic	Archaeological Site	NE	NA	P
Confederate Gun Pits 8LI00334	Civil War, 1861-1865	Archaeological Site	NRL	Fair	P
Barracks 8LI00335	1935	Historic Structure	NR	Fair	RH
Park Shop 8LI00336	1937	Historic Structure	NR	Fair	RH
Cattle Guard 8LI00337	1936	Historic Structure	NR	Fair	S
Stone Bridge 8LI00338	1940	Historic Bridge	NR	Fair	RH
Cotton Warehouse 8LI00339	Statehood-Antebellum, 1845-1860	Archaeological Site	NE	Poor	P

Table 4: Cultural Sites Listed in the Florida Master Site File

Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
P70-6 8LI00380	Prehistoric-Aceramic Prehistoric unspecified	Archaeological Site	NS	NA	P
P71-1 8LI00381	20 th Century American Prehistoric-Ceramic Aboriginal-Unspecified Historic-Unspecified	Archaeological Site	NS	NA	P
P72-1 8LI00382	Prehistoric-Unspecified Prehistoric-Ceramic	Archaeological Site	NS	NA	P
P72-2 8LI00383	Prehistoric-Unspecified Prehistoric-Ceramic	Archaeological Site	NS	NA	P
P72-3 8LI00384	Prehistoric-Unspecified Prehistoric-Aceramic	Archaeological Site	NS	NA	P
P71-2 8LI00390	Prehistoric-Unspecified Prehistoric-Ceramic	Archaeological Site	NS	NA	P
P71-4 8LI00391	Prehistoric-Unspecified Prehistoric-Ceramic Weeden Island, A.D. 450- 1000	Archaeological Site	NS	NA	P
Slave Cemetery 8LI00530	c. 1870	Historic Cemetery	NE	Fair	P
Scott's Mill 8LI00551	American-20 th Century	Archaeological Site	NE	Fair	P
Garage 8LI00552	c. 1935 – 1944	Historic Structure	NS	Good	R
Warehouse 8LI00553	c. 1935 – 1944	Historic Structure	NR	Fair	R
Picnic Area Pump House 8LI00554	c. 1936-37	Historic Structure	NS	Fair	R
Manager's Residence 8LI00555	c. 1935 – 1944	Historic Structure	NS	Fair	R
Campground Pump House 8LI00556	c. 1937	Historic Structure	NR	Fair	R

Table 4: Cultural Sites Listed in the Florida Master Site File

Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Picnic Area Restroom 8LI00557	1955	Historic Structure	NS	Fair	R
Torrey Pavilion 8LI00558	1955	Historic Structure	NS	Good	R
Yew Shelter 8LI00559	1956	Historic Structure	NS	Good	R
Camper's Restroom 8LI00560	1961	Historic Structure	NS	Good	R
Ab Goodson Mill	American 20 th Century	Archaeological Site	NE	Fair	P

Significance:

NRL National Register listed
 NR..... National Register eligible
 LS..... locally significant
 NE..... not evaluated
 NS..... not significant

Condition

GGood
 FFair
 PPoor
 NA Not Assessed

Recommended Treatment:

RS Restoration
 RH Rehabilitation
 ST Stabilization
 P Preservation
 R Removal

RESOURCE MANAGEMENT PROGRAM

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of DRP's management goals for Torreya State Park. Please refer to the Implementation Schedule and Cost Estimates in the Implementation Component of this plan for a consolidated spreadsheet of the recommended actions, measures of progress, target year for completion and estimated costs to fulfill the management goals and objectives of this park.

While, DRP uses the ten-year management plan to serve as the basic statement of policy and future direction for the park, a number of annual work plans provide more specific guidance for DRP staff to accomplish many of the resource management goals and objectives of the park. Where such detailed planning is appropriate to the character and scale of the park's natural resources, annual work plans are developed for prescribed fire management, exotic plant management and imperiled species management. Annual or longer- term work plans are developed for natural community restoration and hydrological restoration. The work plans provide DRP with crucial flexibility in its efforts to generate and implement adaptive resource management practices in the state park system.

The work plans are reviewed and updated annually. Through this process, DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and the information collected is used to refine techniques, methodologies and strategies, and ensures that each park's prescribed management actions are monitored and reported as required by Chapters 253.034 and 259.037, Florida Statutes.

The goals, objectives and actions identified in this management plan will serve as the basis for developing annual work plans for the park. The ten year management plan is based on conditions that exist at the time the plan is developed, and the annual work provide the flexibility needed to adapt to future conditions as they change during the ten year management planning cycle. As the park's annual work plans are implemented through the ten-year cycle, it may become necessary to adjust the management plan's priority schedules and cost estimates to reflect these changing conditions.

Natural Resource Management

Hydrological Management

Goal: Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.

The natural hydrology of most state parks has been impaired prior to acquisition to one degree or another. Florida's native habitats are precisely adapted to natural

drainage patterns and seasonal water level fluctuations, and variations in these factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from a landscape. Restoring state park lands to original natural conditions often depends on returning natural hydrological processes and conditions to the park. This is done primarily by filling or plugging ditches, removing obstructions to surface water “sheet flow,” installing culverts or low-water crossings on roads, and installing water control structures to manage water levels.

Objective: Restore natural hydrological conditions and functions to approximately 200 acres of sandhill natural community per year.

Torrey State Park has two primary issues relating to hydrology. They are erosion and alteration of groundwater infiltration due to large areas of sand pine plantation in former sandhill habitat in the Sweetwater tract. It is believed that a significant portion of potential rainfall infiltration is being lost via evapotranspiration from 600-planted sand pines per acre on the site. With the conversion of this pine plantation tract back to native sandhill habitat, presumably a significant amount of steephead stream runoff can be restored in the adjacent slope forest.

Objective: Correct erosion problems affecting the old park entrance road corridor, stone bridge and Rock Creek bridge and occurring on unimproved roads and trails.

A storm water management plan should be developed and implemented to stabilize and restore the land reclamation drainage system, including the old park drive retaining walls, the cattle guard and the Rock Creek bridge.

Generally small-scale erosion problems occur when soft, sandy soils are disturbed by excavations, roads, trails, visitor use, management actions and other ground disturbance. These erosion prone areas will be identified, mapped and monitored using a photo point program. Correction of small-scale erosion problems is handled by park staff using various stabilization methods. In several locations, foot trails have been re-routed to correct erosion problems. In other areas, a system of water bars has been installed to redirect runoff and resolve ongoing erosion problems. In some cases, large-scale erosion problems have been addressed by seeking assistance from the USDA NRCS and the Orange Hill Soil and Water Conservation District.

Natural Communities Management

Goal: Restore and maintain the natural communities/habitats of the park.

As discussed above, DRP practices natural systems management. In most cases, this entails returning fire to its natural role and extent in fire-dependent natural communities. Other methods to implement this goal include large-scale restoration projects as well as smaller scale natural community improvements. Following are the natural community management objectives and actions recommended for the

state park.

Prescribed Fire Management: Prescribed fire is used to mimic natural lightning-set fires, which are one of the primary natural forces that shaped Florida's ecosystem. Prescribed burning increases the abundance and health of many wildlife species. A large number of Florida's imperiled species of plants and animals are dependent on periodic fire for their continued existence. Fire-dependent natural communities gradually accumulate flammable vegetation; therefore, prescribed fire reduces wildfire hazards by reducing these wild land fuels.

All prescribed burns in the Florida state park system are conducted with authorization from the FDACS, Florida Forest Service (FFS). Wildfire suppression activities in the park are coordinated with the FFS.

Objective: Within ten years, have 4,700 acres of the park maintained within the optimum fire return interval.

Table 5 contains a list of all fire-dependent natural communities found within the park, their associated acreage and optimal fire return interval, and the annual average target for acres to be burned.

Table 5: Prescribed Fire Management		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Sandhill*	300	1-3
Upland Pine	2,363	2-5
Annual Target Acreage	573-1087	

**Most of the total sandhill acreage on Torreya (4,200 acres) remains in pre-park sand pine plantation, and is being restored to a sandhill natural community.*

The park is partitioned into three series of burn zones. Old Park – TY, Aspalaga tract - TY-A and Sweetwater tract– TY-S are the corresponding designations for mapping purposes (see Management Zones Map). The park's burn plan is updated annually because fire management is a dynamic process. To provide adaptive responses to changing conditions, fire management requires careful planning based on annual and very specific burn objectives. Each annual burn plan is developed to support and implement the broader objectives and actions outlined in this ten-year management plan.

The impacts of future prescribed fire on the Apalachicola rosemary plant in the Sweetwater tract are unknown. The park service is currently conducting research on the effects of prescribed fire on this Federally Endangered plant in restoration unit 2. It is possible that Sweetwater burn units containing this species will

ultimately be burned on non-standard intervals in order to minimize possible adverse effects of fire on the Apalachicola rosemary plant.

The goal of the Torreya burn program is to expand all burn zones to their presumed original area of fire-type community. In many units, fire is permitted to carry naturally from upland habitats into hardwood-dominated ravines, and extinguish naturally due to lack of fuel or mesic/hydric conditions. Creation of new interior fire lines is discouraged, and fires are allowed to burn into surrounding ecotones gradually increasing the size of burned areas within a given management unit. Much of the characteristics of many fire-type communities have degraded over time due to active fire exclusion or suppression.

Upland hardwood species such as laurel oak, water oak, sweetgum and dogwoods have invaded many of these sites due to this lack of frequent fire. These off-site hardwoods have changed the makeup of these fire-type communities and put them on their way to succession from an upland pine community to an upland mixed/hardwood community. With succession, the characteristics of the open, pine-dominated community with its lush vegetative ground cover is lost. The invading hardwoods provide more shade that reduced the growth of wiregrass and other herbaceous ground cover plants. This loss of groundcover has made these areas less attractive to the wildlife of the upland pine community. Deer, turkey and quail have less cover for protection; gopher tortoise and Sherman's fox squirrel have less open areas to move from site to site. The loss of ground vegetation has forced gopher tortoises to move to light gaps in the canopy along edges and roadsides in order to find lush grasses and other plants needed for food.

The burn program at Torreya State Park has been in progress for nearly 30 years. Off-site hardwoods are also mechanically removed in some areas by use of girdling and herbicide. Records and long-term staff both indicate that management zone TY-A, for example has now been restored from what was once essentially a hardwood hammock to what we see today, a lush and diverse wiregrass-dominated upland pine community. Consistent, repetitive burning on 2-5 year rotations has provided positive impacts to the upland community. Hardwood density has been reduced, herbaceous plant growth has increased and desired wildlife species have increased and moved into new areas. The prescribed burning in combination with other restoration efforts has halted the progression of succession in many of the upland areas.

The burn program of the park originally concentrated on late spring and summer burning after an initial winter burn to reduce the fuel load. Prescribed burning in the late summer has been difficult in some zones. High concentrations of hardwoods, lack of native grasses, and high moisture content of hardwood leaf litter has limited the effectiveness of burns done at those times. These conditions

have forced park staff to conduct burns in the late winter and early spring for some zones and parts of other zones. The weather conditions for these late winters, early spring burns have been excellent with low humidity, higher winds and drier fuels. The results of these burns have been excellent. Burn zones have been expanded and the goals of burning are being met. These goals include: 1) fuel load reduction which, if left to accumulate, might cause a destructive wildfire, 2) exposure of bare mineral soil which has allowed for the successful germination of herbaceous vegetation and pine seeds, 3) reduction of invading hardwood trees, and 4) maintenance of planted pine areas as the first step in the restoration process of these disturbed sites.

The burn program has been expanded into selected areas of the Rock Creek, Aspalaga and Sweetwater tracts of the park. These areas are burned based on the condition of the plant community and the probability that the community can be restored successfully. Prescribed burns on the northern section of the Aspalaga tract must be carefully planned to effectively deal with smoke issues along the Interstate 10 corridor. These areas include sites with wiregrass growth, the presence of longleaf pines, other open uplands with intact groundcover and planted pine stands. These types of sites are more likely to carry a fire through the zone and respond to the effects of burning.

In order to track fire management activities, DRP maintains a statewide burn database. The database allows staff to track various aspects of each park's fire management program including individual burn zone histories and fire return intervals, staff training/ experience, backlog, if burn objectives have been met, etc. The database is also used for annual burn planning which allows DRP to document fire management goals and objectives on an annual basis. Each quarter the database is updated and reports are produced that track progress towards meeting annual burn objectives.

Natural Communities Restoration: In some cases, the reintroduction and maintenance of natural processes is not enough to reach the natural community desired future conditions in the park, and active restoration programs are required. Restoration of altered natural communities to healthy, fully functioning natural landscapes often requires substantial efforts that include mechanical treatment of vegetation or soils and reintroduction or augmentation of native plants and animals. For the purposes of this management plan, restoration is defined as the process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegetation structure and physical characters.

Examples that would qualify as natural communities' restoration, requiring annual restoration plans, include large mitigation projects, large-scale hardwood removal

and timbering activities, roller-chopping and other large-scale vegetative modifications. The key concept is that restoration projects will go beyond management activities routinely done as standard operating procedures such as routine mowing, the reintroduction of fire as a natural process, spot treatments of exotic plants, small-scale vegetation management and so forth.

Following are the natural community/habitat restoration and maintenance actions recommended to create the desired future conditions in the sandhill and upland pine communities of Torreya State Park.

Objective: Conduct habitat/natural community restoration activities on 2,000 acres of sandhill community.

The most significant habitat restoration project on Torreya is the elimination of approximately 4,000 acres of planted sand pine on the Sweetwater tract, and its conversion back to a natural sandhill community. The park is fortunate in having the adjacent TNC preserve with over 15 years of experience in accomplishing similar restoration objectives. The Park Service has developed a specific restoration plan for the Sweetwater tract, which details the actions, costs and sequence of management actions necessary for this task. The Park Service is also conducting monitoring to document the success of groundcover restoration and impacts to imperiled species occurring on the site. It has become apparent that The Park Service can actually convert sand pine plantation to a restored sandhill habitat, with sufficient native groundcover to support prescribed fire in about four years. Although Torreya has other restoration needs in upland pine and other habitats on the park, the Sweetwater tract restoration is considered a project of statewide significance. The park natural communities map shows the 300+ acres of sandhill that have been restored since 2004, and the remaining 4000+ acres remaining to rehabilitate. In light of current budget and staffing constraints, the complete restoration of the entire Sweetwater tract will require many decades to complete.

Natural community restoration elsewhere on Torreya should be expanded by prescribed burning, offsite hardwood removal, timber harvesting and planting of native species. Natural community restoration plans need to be updated periodically for upland areas that are candidates for restoration. These plans should address planting and seeding native groundcover species and longleaf pines. Following the update of the restoration plans, their recommended actions should be implemented. Park staff should also coordinate with Florida Gas Transmission to ensure the re-vegetation of the habitats affected during work done on the Florida Gas Transmission right-of-way.

Natural Communities Improvement: Improvements are similar to restoration but on a smaller, less intense scale. This typically includes small-scale vegetative management activities or minor habitat manipulation. Following are the

natural community/habitat improvement actions recommended at the park.

Objective: Conduct natural community improvement activities on 20 acres of upland pine natural community.

Continue to remove off-site oaks from upland pine habitats of the Rock Creek tract, which were degraded by pre-park fire exclusion.

Imperiled Species Management

Goal: Maintain, improve or restore imperiled species populations and habitats in the park.

DRP strives to maintain and restore viable populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

In the preparation of this management plan, DRP staff consulted with staff of the FFWCC's Imperiled Species Management or that agency's Regional Biologist and other appropriate federal, state and local agencies for assistance in developing imperiled animal species management objectives and actions. Likewise, for imperiled plant species, DRP staff consulted with FDACS. Data collected by the USFWS, FFWCC, FDACS and FNAI as part of their ongoing research and monitoring programs will be reviewed by park staff periodically to inform management of decisions that may have an impact on imperiled species at the park.

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet DRP's mission. Long-term monitoring is also essential to ensure the effectiveness of resource management programs. Monitoring efforts must be prioritized so that the data collected provides information that can be used to improve or confirm the effectiveness of management actions on conservation priorities. Monitoring intensity must at least be at a level that provides the minimum data needed to make informed decisions to meet conservation goals. Not all imperiled species require intensive monitoring efforts on a regular interval. Priority must be given to those species that can provide valuable data to guide adaptive management practices. Those species selected for specific management action and those that will provide management guidance through regular monitoring are addressed in the objectives below.

Objective: Continue to compile and update baseline data on imperiled plant and animal species that occur on park property.

Objective: Annually monitor and document two imperiled animal species in the park.

A pair of bald eagles has nested in the park since 1989. The pair seems to be doing well and regularly produce chicks. Protection of these eagles is generally limited to preventing harassment (USFWS, S.E. Bald Eagle recovery plan). This seems to be all that is needed for them to do well in the park.

With continued restoration of upland natural communities, the park, along with adjacent conservation lands, can potentially provide relatively expansive habitat for Sherman's fox squirrel. Identifying the presence of local populations of Sherman's fox squirrel within distinct management zones would be helpful in determining the animal's specific habitat needs. Resource management measures that encourage those elements found to be beneficial or perhaps vital to Sherman's fox squirrel could be applied to similar management zones where the animals no longer occur. The presence of local populations of Sherman's fox squirrel is most efficiently ascertained by nest counts in longleaf pine habitat (Kantola and Humphrey 1990). Relatively large (40+ acres) of good condition longleaf pine and turkey oak habitat with imbedded or adjacent mast-producing hardwood trees such as hickories and white oaks should be prioritized for nest surveys.

Gopher tortoises will also be monitored in occupied habitats, in conjunction with prescribed burns and restoration activities that are completed each year. As sandhill habitat is re-created on the Sweetwater tract, it may become possible to re-stock gopher tortoises into areas where they have been extirpated. These actions will be planned in accordance with the current FFWCC Gopher Tortoise Management Plan and DRP Gopher Tortoise Management and Restocking Standard. Professional biologists are assisting the park in monitoring additional imperiled animal species.

As the number of plant and animal species known from the park increases due to monitoring efforts, so does the number of imperiled species, which currently includes more than 90 species listed by either state and/or federal agencies. Individual treatment of management strategies for each species is not included here for space considerations. Each species is tracked and monitored to the extent possible. Whenever possible, assistance is sought to better survey and monitor as well as improve our knowledge of each of these listed species.

Objective: Monitor and document three selected imperiled plant species in the park.

The park plans to continue to monitor and manage the populations of Florida yew,

torreya and Apalachicola rosemary occurring on the park. Imperiled species protection at Torreya can include many measures. Protections in the form of active management, passive management, or by protection of a species' habitat are among them. The Florida Park Service is the custodian of approximately one third of the remaining naturally occurring populations of the Florida torreya. Current research to control the fungal canker contributing to the decline of this species should continue to be supported, and additional assistance sought. The trees are being mapped using GPS technology. This holds true for the Florida yew, Ashe's magnolia and other listed species within the park. Several prominent Florida botanists and graduate students are assisting the park in monitoring additional imperiled plant species.

Objective: Restore priority imperiled species populations within the park.

With the acquisition of the Sweetwater tract, the park has obtained the majority of the remaining habitat for the Apalachicola rosemary, as well as significant numbers of Florida torreya, Florida yew, Apalachicola dusky salamanders and other imperiled species. The park will develop specific management plans for the highest priority imperiled species likely to be impacted by management actions. Management actions such as exotic removal (feral hogs) and hydrological restorations are expected to benefit species such as the Apalachicola dusky salamander.

Gopher tortoises are present on Torreya, and seem to be doing well in many parts of the park. The Sweetwater tract sandhill restoration project currently underway will provide greatly expanded gopher tortoise habitat on the park. Assistance to monitor the current number of tortoises and population dynamics should be sought from nearby colleges and universities, consulting firms, environmental organizations, etc.

Exotic Species Management

Goal: Remove exotic and invasive plants and animals from the park and conduct needed maintenance control.

DRP actively removes invasive exotic species from state parks, with priority being given to those causing the greatest ecological damage. Removal techniques may include mechanical treatment, herbicides or biocontrol agents.

Objective: Annually treat 2 acres of exotic plant species in the park.

Exotic plants occurring within the park include Japanese climbing fern, Chinaberry, Wild taro and Chinese privet. The location of all observed exotic plants should be documented on maps. In addition, whenever possible, these invasive exotics are removed, and the area is monitored and treated for new or re-sprouting exotic plants. Recently, removal of wild taro has also been implemented by contract through the FFWCC Bureau of Invasive Species Management. Other exotics are

treated by park staff when they are encountered. Research is being conducted on feasibility of controlling or containing the spread of Japanese climbing fern in slope forests habitat.

Objective: Implement control measures on three nuisance and exotic animal species in the park.

Armadillos, feral hogs and coyotes are the main non-native animal species in the park. Due to the sensitive nature of the seepage streams, steepheads and large amounts of hardwood forests, feral hogs and armadillos probably present the greatest invasive animal threats to the park. Armadillos and feral hogs eat invertebrates, salamanders, and detritivores and their digging and rooting activities can have an adverse impact on soils. Due to the unique and remarkably fragile nature of these rare natural communities, these animals should be removed by trained park staff according to DRP's policies, whenever possible.

Torrey's feral hog problem increased with the acquisition of the Sweetwater, Aspalaga and the Neal "elbow" tracts. In the past, the Sweetwater tract was leased to a hunt club and feral hogs were introduced into the site, causing extensive rooting damage to the steephead streams. In 2004-2005, trapping efforts by the USDA Division of Wildlife Services and the Park Biologist significantly reduced the feral hog population in the Sweetwater tract. However, the nearby Apalachicola River valley is a reservoir for feral hogs in this area. Trapping efforts are ongoing and park staff will continue to assess the impacts of feral hog activity on steephead streams, floodplain forest and other wetland areas. Impacts by other exotic or nuisance species should also be monitored and managed as appropriate.

Special Management Considerations

Timber Management Analysis

Chapters 253 and 259, Florida Statutes, require an assessment of the feasibility of managing timber in land management plans for parcels greater than 1,000 acres if the lead agency determines that timber management is not in conflict with the primary management objectives of the land. The feasibility of harvesting timber at this park during the period covered by this plan was considered in context of DRP's statutory responsibilities and an analysis of the park's resource needs and values. The long-term management goal for forest communities in the state park system is to maintain or re-establish old-growth characteristics to the degree practicable, with the exception of those communities specifically managed as early successional.

Torrey State Park now contains extensive areas of pine plantations within the park. In an effort to restore these natural communities and to re-establish natural fire regimes, programs of thinning, clear-cutting and re-planting will be necessary. A

Timber Management Assessment for the park can be found in Addendum 8.

Arthropod Control Plan

All Division lands are designated as “environmentally sensitive and biologically highly productive” in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local mosquito control district proposes a treatment plan, the Division responds within the allotted time and reaches consensus with the mosquito control district. By policy of the Department since 1987, aerial adulticiding is not allowed, but larviciding and ground adulticiding (truck spraying in public use areas) is typically allowed. The Division does not authorize new physical alterations of marshes through ditching, or water control structures. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor’s Emergency Proclamation.

Additional Considerations

Special management considerations at Torreya State Park consist of taking precautions and active management to protect and enhance imperiled species, particularly rare plant species. In addition, the steep slopes and fragile soils are highly vulnerable to erosion. Special planning and precautions are needed to ensure the preservation of roads, trails, firebreaks and new facilities due to the risk of erosion and stream siltation.

Cultural Resource Management

Cultural Resource Management

Cultural resources are individually unique, and collectively, very challenging for the public land manager whose goal is to preserve and protect them in perpetuity. DRP is implementing the following goals, objectives and actions, as funding becomes available, to preserve the cultural resources found in Torreya State Park.

Goal: Protect, preserve and maintain the cultural resources of the park.

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places and collections care must be submitted to the FDOS, Division of Historical Resources (DHR) for review and comment prior to undertaking the proposed project. Recommendations may include, but are not limited to concurrence with the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effect. In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to DHR for consultation and DRP must demonstrate

that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of DHR.

Objective: Assess and evaluate 79 of 79 recorded cultural resource sites in the park.

All known archaeological sites located on Torreya park property will be assessed and evaluated within the ten-year period of this management plan. While the CCC resource survey (Historic Property Associates, Inc. 1989) provided sufficient documentation for evaluation of the New Deal Era resources, there is a need for seven historic structures reports and an evaluation of the historic landscapes within the park. The historic structures reports should review in detail the condition, changes to the original buildings, identify, and prioritize repair, restoration and rehabilitation projects.

Objective: Compile reliable documentation for all recorded historic and archaeological resources.

The park has not had a comprehensive archaeological survey and needs to have an archaeological predictive model developed. This model will provide for high, medium and low areas of probability for the occurrence of prehistoric sites. This model will provide guidance for future developments as well as Phase 1 surveys.

A Scope of Collections has been developed to guide acquisition of collection items. An administrative history is needed for the park that will help interpret the history of the park. Oral histories of former CCC members as well as park staff also need to be recorded to help document the park's history.

The park needs to develop and implement a monitoring plan to prepare annual condition assessments of the park's cultural resources. As a result, the FMSF should be updated as needed.

A cyclical maintenance plan should be implemented to help guide the park with needed repairs for all of its buildings. The rehabilitation of the park's historic buildings should be implemented in order of priority established from the historic structures reports and from results of annual monitoring. The park does not intend to conduct any archaeological preservation or stabilization projects during the plan period.

Park staff will follow a cyclical maintenance program for all New Deal Era structures. While that program is being developed, park staff will continue to repair

physical damage to framing, siding and roof fabric to reestablish building envelopes, whenever necessary. Staff will routinely trim closely growing foliage away from roofs and siding, and will grade foundation areas to reestablish the water resistance of structures. Regular professional inspections of the historic structures and bridge in the park will be conducted.

The condition of recorded and unrecorded cultural resources should be regularly patrolled and assessed. The park has an established schedule of regular inspections, and will establish photo points for all cultural resources. Comparison of periodic inspection reports and photographs will be used to determine general maintenance priorities and develop requests for larger project funding.

Park staff should maintain a set of files for each established site. Any activities such as maintenance, unauthorized use or other impacts and new findings that occur should be documented. All archival records associated with Torreya State Park should continue to be organized and inventoried. Funding should be pursued to digitize and make available on the internet all significant archival records. In addition, a safe alternative location for storing records should be sought.

Efforts should continue to preserve culturally significant items or character defining features on historic structures. The structural integrity of the Gregory house (windows, interior walls and roof) needs to be re-established in order to maintain the structure's weather tight integrity. In addition, Gregory House furniture and other artifacts related to the history of the park should be preserved, displayed and interpreted.

Objective: Bring 16 of 79 recorded cultural and archaeological into good condition.

There are sixteen cultural resource sites on the park that consist of historic structures, ruins or features which require upkeep, maintenance or repair. Examples would be: the Gregory House, the Barracks, the Park Shop, the Stone Bridge, the Cotton Warehouse, the "Torreya Cemetery" and other historic park features." These resources will be regularly monitored for degradation or vandalism, and necessary repairs or restoration will be made in a timely manner. If a major repair such as re-roofing becomes necessary, grant funding will be sought to fund these tasks. Minor maintenance, such as removal of vegetation degrading stone walls, will be handled directly by park staff.

Resource Management Schedule

A priority schedule for conducting all management activities that is based on the purposes for which these lands were acquired, and to enhance the resource values, is located in the Implementation Component of this management plan.

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation and recreation lands titled in the name of the Board of Trustees are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. The managing agency considered the findings and recommendations of the land management review team in developing this management plan update (see Addendum 9).

Torrey State Park was subject to a land management review on June 2, 2009. The review team made the following determinations:

1. The land is being managed for the purpose for which it was acquired.
2. The actual management practices, including public access, complied with the management plan for this site.

LAND USE COMPONENT

INTRODUCTION

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP). These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors.

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan that culminates in the actual design and construction of park facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management, through public workshops, and environmental groups. With this approach, DRP objective is to provide quality development for resource-based recreation throughout the state with a high level of sensitivity to the natural and cultural resources at each park.

This component of the unit plan includes a brief inventory of the external conditions and the recreational potential of the unit. Existing uses, facilities, special conditions on use, and specific areas within the park that will be given special protection, are identified. The land use component then summarizes the current conceptual land use plan for the park, identifying the existing or proposed activities suited to the resource base of the park. Any new facilities needed to support the proposed activities are described and located in general terms.

EXTERNAL CONDITIONS

An assessment of the conditions that exist beyond the boundaries of the unit can identify any special development problems or opportunities that exist because of the unit's unique setting or environment. This also provides an opportunity to deal systematically with various planning issues such as location, regional demographics, adjacent land uses and park interaction with other facilities.

Within the vicinity of Torreya State Park there are over half a million acres of conservation lands that provide a variety of resource-based recreation opportunities. Collectively, these lands offer hunting, fishing, boating, canoeing/kayaking, hiking, biking, horseback riding, off-road vehicle riding, camping, picnicking and wildlife viewing.

Existing Use of Adjacent Lands

The park is located in a rural and sparsely populated area of the state. The surrounding land uses are commercial timber, agricultural, conservation, and rural

residential. Many of the properties in the area are leased for hunting, including a few parcels adjacent to the park boundary, which causes some concern for trail user safety during hunting season. Another concern involves erosion-prone silviculture areas outside the park boundary. If these areas are managed improperly, the result could wash soils into the seepage streams of the park. When problems exist, cooperative agreements with adjacent landowners to reduce and repair the erosion should be pursued.

Planned Use of Adjacent Lands

At the writing of this plan, DRP has not been notified of planned development in the lands surrounding the park. The slow rate of growth in the region immediately surrounding the park indicates that the area will likely retain its rural character.

According to the Future Land Use Map for Liberty County (2000), most of the lands surrounding the park are designated for Agricultural and Conservation uses. However, an area between the Rock Creek Tract and Aspalaga Tract of the park is identified as Mixed Use Suburban Residential. This category allows up to two dwelling units per acre and limited commercial and public uses. In addition, three smaller areas, each labeled Rural Village, are located to the north and west of the Sweetwater Tract of the park. This designation allows a variety of housing types plus businesses and public uses that are in harmony and compatible with the suburban residential scale and character of the area.

Within Gadsden County, the Future Land Use Map (2006) designates the land surrounding the Aspalaga Tract of the park as either Agricultural-3 (one dwelling unit per 20 acres) or Silviculture (one dwelling unit per 80 acres).

Across the river, the lands within the viewshed of the park are identified for conservation on the Future Land Use Maps for both Calhoun (2001) and Jackson (2007) Counties.

PROPERTY ANALYSIS

Effective planning requires a thorough understanding of the unit's natural and cultural resources. This section describes the resource characteristics and existing uses of the property. The unit's recreation resource elements are examined to identify the opportunities and constraints they present for recreational development. Past and present uses are assessed for their effects on the property, compatibility with the site, and relation to the unit's classification.

Recreation Resource Elements

This section assesses the unit's recreation resource elements those physical qualities that, either singly or in certain combinations, supports the various resource-based recreation activities. Breaking down the property into such elements provides a means for measuring the property's capability to support individual recreation

activities. This process also analyzes the existing spatial factors that either favor or limit the provision of each activity.

Land Area

Currently, Torreya State Park contains 13,734 acres of some of the most variable terrain in Florida. Rising more than 150 feet above the Apalachicola River, the bluffs are divided by deep ravines that have been shaped by streams throughout the centuries. This complex landscape of ridges and ravines, are unique in Florida and include upland pine forest, upland hardwood forest, slope forest, upland mixed forest, sandhill and bluffs. The bluffs and ravines are forested by many hardwood trees and a high diversity of rare plant species more typically associated with the Piedmont Province of the Appalachian Mountains. The wetland communities include floodplain forest, floodplain swamp, bottomland forest and seepage stream.

The park provides opportunities for day hiking, picnicking and camping in some of the most scenic natural areas in Florida. With the recent additions of the Aspalaga and Sweetwater tracts of land, the potential to establish premier backpacking trails for multi-day hikes through the complex mosaic of natural communities exists. Trails should display and interpret the diversity of resources, topography and vistas the Apalachicola region has to offer. Due to the fragility of the soils, future trail development should employ techniques that incorporate proven erosion control measures.

The topography of the park includes slopes that exceed 60 percent on much of the property, and the sandy-clay soils of this state park are particularly subject to erosion. It is the judgment of DRP staff that activities other than hiking on trails within the current boundary of the state park would increase the park's erosion problems, endanger the fragile ravine system and pose potential safety hazards to users.

Water Area

The park is situated on the east bank of the Apalachicola River, the largest alluvial river in Florida. Nearly six miles of the river shoreline lies along the park boundary. Wide floodplain swamp lines the remainder of the shoreline. In addition, numerous steephead streams, a unique type of seepage stream, run throughout the park on its way to the river. These streams are not navigable by canoe/kayak and trail crossings should be limited to protect this sensitive resource. At the northern end of the park, the Aspalaga tract contains a boat ramp with a limited parking area on the Apalachicola River. The river has potential to support a paddling trail of which the park could offer support facilities in the future.

Natural Scenery

The visual resources of this state park are exceptional. The high bluffs overlooking the Apalachicola River, the forested ridge and ravine system present a rare

opportunity to experience a semi-mountainous environment. In the park's southwestern section, a clay outcrop overlooking part of the Weeping Ridge hiking trail appears to have rust on it due to a high concentration of iron, a distinct geological formation in the north Florida landscape. The interior the park offers outstanding opportunities for study of some of Florida's unique upland plant communities. Viewpoints along the ridges, bluffs and river shoreline of the park provide expansive vistas. The visual character of this state park provides a quality setting for nature observation, scenery appreciation and nature photography. In addition, the hardwood trees provide some of the finest displays of fall color found in Florida.

Significant Wildlife Habitat

Torrey State Park and surrounding area contain the greatest number of endangered and threatened species in the state (Pritchard 1979). There are more than 90 imperiled plant and animal species such as the Florida torrey tree (*Torrey taxifolia*), Florida yew (*Taxus floridana*) and Apalachicola rosemary (*Conradina glabra*). The torrey tree, from which the park derives its name, is endemic to the area of the park and the steep ravines within the park. The Florida yew, another rare species, is only found in this area. The Sweetwater tract contains nearly all of the known range of the endangered Apalachicola rosemary.

Animals commonly found in the park include deer (*Odocoileus virginianus*), grey fox (*Urocyon cinereoargenteus*), gopher tortoise (*Gopherus polyphemus*) and the unusual Barbour's map turtle (*Graptemys Barbouri*). An active bald eagle (*Haliaeetus leucocephalus*) nest can be seen along the Rock Creek portion of the hiking trail. Swallow-tailed kites (*Elanoides forficatus*) and Mississippi kites (*Ictinia mississippiensis*) are also sighted frequently.

All designated species will be protected under DRP's established management policies. Visitor impacts to listed species are carefully monitored to identify unacceptable impacts in advance. The diversity of listed and non-listed wildlife supported by the natural communities of the park provides opportunities for seasonal birding and wildlife observation at many locations.

Natural Features

The significant natural features in the park include both geological and vegetative elements. The high ridges overlooking the Apalachicola River, and the ridges and ravine slopes offer a type of scenery usually not found in Florida. These, combined with the seasonal change of the area's hardwood forests, provide an experience that is unique in Florida. The ravines and slopes also provide habitat for much of the park's impressive biological diversity. The streams at Torrey are unique steephead streams. They are clear, cool streams with relatively sparse vegetation. They often disappear in the ground and resurface further downstream. A small waterfall

occurs at the southern part of Weeping Ridge Trail.

Archaeological and Historical Features

Torrey State Park is one of the original nine parks in the Florida state park system. In July 1935, the CCC installed Company 4453 (Florida SP-6) at Torrey. Some of the original CCC structures remain, including the barracks, camp buildings and limestone retention walls. These structures give visitors the opportunity to view CCC-era park infrastructure and craftsmanship.

Seventy-nine sites of pre-historic and historic importance are currently included in the Master Site File for Torrey State Park. The park possesses significant historical associations, including the location of six Confederate gun pits along Battery or Neal's Bluff, a burial mound, a midden, the Gregory House, an African-American cemetery, and several Civilian Conservation Corps (CCC) structures.

Constructed by the Confederate Army during the Civil War, the gun pits overlooked the Apalachicola River, providing an important defense against possible Union attempts to use the river for operations in western Florida and southern Georgia. The gun pits and their accompanying communication trenches have been incorporated into the park's trail system.

The Gregory House, a two-story Greek Revival wood frame building, was donated to the park by the Neal Lumber Company of Blountstown. The house was dismantled and relocated by barge to Neal's Bluff from its original location at Ocheese Landing across the Apalachicola River. The Gregory House provides interpretive opportunities for visitors to have a glimpse into the 19th century plantation and early Civil War era.

Assessment of Use

All legal boundaries, significant natural features, structures, facilities, roads and trails existing within the park are delineated on the base map (see Base Map). Specific uses made of the unit are briefly described in the following sections.

Past Uses

Before state ownership, the park had numerous owners and some areas were intensively logged. Since 1935, the CCC activities related to the establishment and construction of the park, and the park's reforestation have been the major changes affecting Torrey State Park.

Future Land Use and Zoning

DRP works with local governments to establish designations that provide both consistency between comprehensive plans, zoning codes and permit typical state park uses and facilities necessary for resource-based recreation opportunities.

The Future Land Use designations for the park properties within Liberty County are Conservation and Agriculture (Liberty County, 2000). Both of these land use designations allow outdoor recreation activities. The park properties within Gadsden County are designated Agricultural-3 and Silviculture on the Future Land Use Map (Gadsden County, 2006). Recreational use is compatible with the agriculture category while the silviculture category reflects historical use of the area and allows timber management for park natural resource restoration purposes.

Current Recreational Use and Visitor Programs

The recreational uses currently available include extensive hiking trails, picnicking, RV and tent camping, group camping, primitive camping, on- road bicycling, boating, guided tours of the historic Gregory House and appreciation of the natural and cultural features. The camping area also offers one Year-round Universal Recreational Tent (YURT). In addition to the daily tours of the Gregory House, the park also offers regular guided nature walks and talks as well as special programs throughout the year including evening programs on CCC history and candlelight tours of the house. Torreya State Park recorded 24,411 visitors in FY2010/2011. By DRP estimates, the FY 2010/2011 visitors contributed \$1.4 million in direct economic impact and the equivalent of 28.6 jobs to the local economy (DEP, 2011).

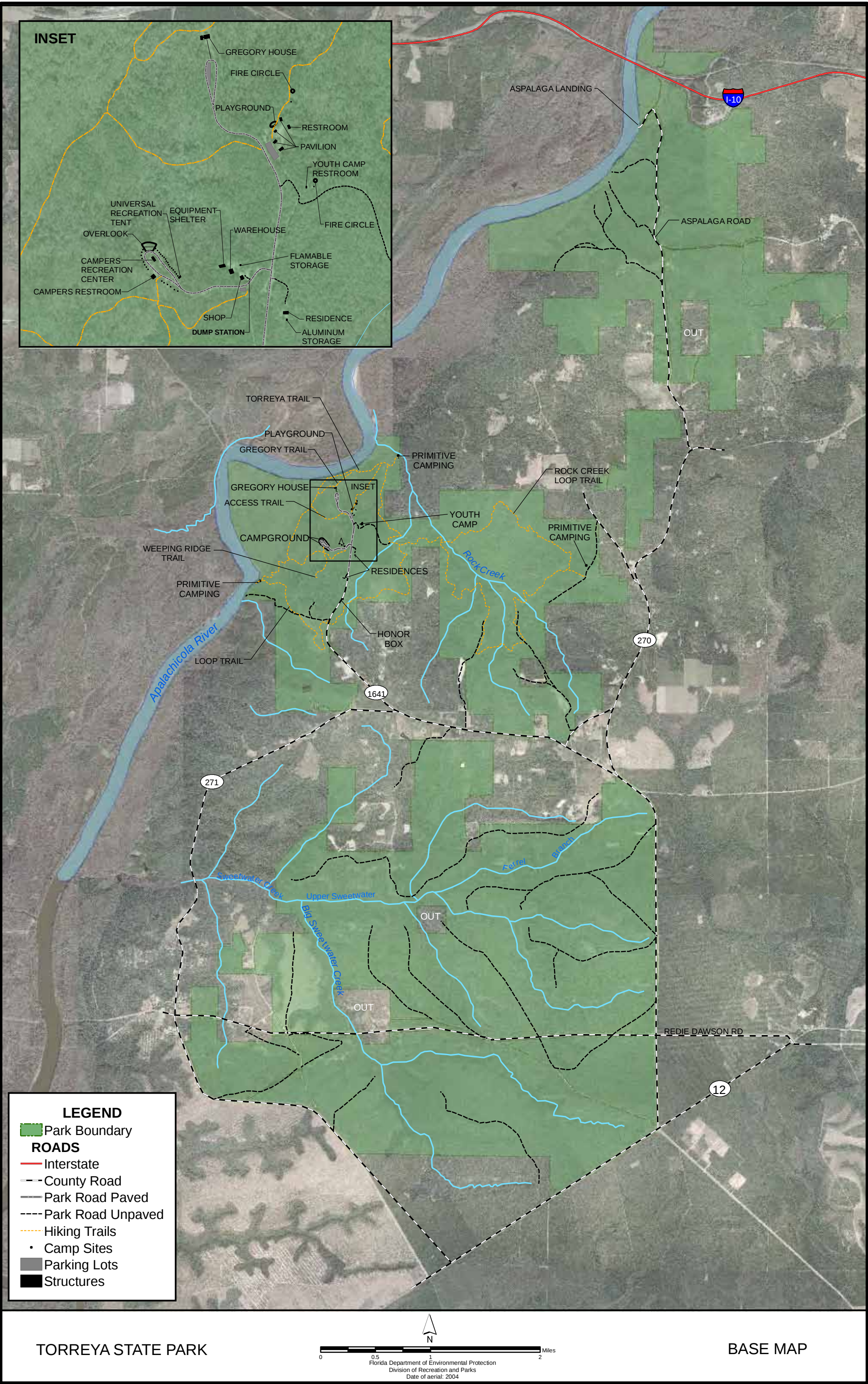
Other Uses

Talquin Electric Company has several power line easements located within this property. In addition, Mr. Billy Faircloth and Mr. John Gunter have separate access easements, associated with adjacent residences and property that cross the park.

Protected Zones

A protected zone is an area of high sensitivity or outstanding character from which most types of development are excluded as a protective measure. Generally, facilities requiring extensive land alteration or resulting in intensive resource use, such as parking lots, camping areas, shops or maintenance areas, are not permitted in protected zones. Facilities with minimal resource impacts, such as trails, interpretive signs and boardwalks are generally allowed. All decisions involving the use of protected zones are made on a case-by-case basis after careful site planning and analysis.

At the park the alluvial stream, bottomland forest, floodplain forest, floodplain swamp, sandhill, slope forest and seepage stream communities have been designated as protected zones as delineated on the Conceptual Land Use Plan. In addition, the CCC structures, the historic Gregory House and Neal's Bluff have been designated as protected zones.



Existing Facilities

Recreation Facilities

Most of the facilities at Torreya State Park are at least 20 to 30 years old. The original park structures date from the mid-1930s. The historic integrity of the original CCC development has been preserved almost entirely. Under current management guidelines, care is taken in the maintenance and preservation of the CCC work in order to protect historical accuracy.

Trailhead

Stabilized parking (15 vehicles)

Trails

Hiking (15 mi.)

Nature (1.3 mi.)

Picnic Area

Large picnic shelters (3)

Small picnic shelter (1)

Playground

Restroom

Paved parking (42 vehicles)

Weeping Ridge Camping Area

Campsites with water and electricity (30)

YURT campsite (1)

Recreation hall (Historic structure)

Camper registration office/ meeting room (Historic structure)

Bathhouses (2)

Group Camp # 1

Picnic tables (3)

Small restroom (1)

Grilles (2)

Potable water

Group Camp # 2

Picnic tables (3)

Fire circle (2)

Grilles (2)

Potable water

Primitive Campsites (3)

Gregory House

Gift Shop

Paved parking (15 vehicles)

Support Facilities

Picnic Area

Pumphouse

Gregory House

Park office (in Historic house)

Support

Flammable storage building

Equipment shed

Warehouse/ storage building (Historic structure)

Repair shop (Historic structure)

Ranger residence (1)

Manager residence (Historic structure)

Roads

Paved road (2 mi.)

Service road (3 mi.)

CONCEPTUAL LAND USE PLAN

The following narrative represents the current conceptual land use proposal for this park. As new information is provided regarding the environment of the park, cultural resources, recreational use, and as new land is acquired, the conceptual land use plan may be amended to address the new conditions (see Conceptual Land Use Plan). A detailed development plan for the park and a site plan for specific facilities will be developed based on this conceptual land use plan, as funding becomes available.

The conceptual land use plan described here is the long-term, optimal development plan for the park, based on current conditions and knowledge of the park's resources, landscape and social setting. The development plan will be reassessed during the next update of the park management plan, and modified to address new conditions, as needed.

During the development of the management plan, DRP assessed potential impacts of proposed uses or development on the park resources and applied that analysis to decisions on the future physical plan of the park as well as the scale and character of proposed development. Potential impacts are more thoroughly identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements (such as existing topography and vegetation, sewage disposal and stormwater management) and design constraints (such as imperiled species or cultural site locations) are more thoroughly investigated. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to avoid impacts and to mitigate those that cannot be avoided. Federal, state and local permit and regulatory requirements are met by the final design of the project. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses

Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities in the park.

The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. New and expanded activities and programs are also recommended and discussed below.

Objective: Maintain the park's current recreational carrying capacity of 1,082 users per day.

The park will continue to offer opportunities for short and long distance hiking, picnicking, on-road bicycling, RV and tent camping, group camping, primitive camping, boating and nature study.

Objective: Expand the park's recreational carrying capacity by 402 users per day.

Due to the significant increase in park acreage since the previous management plan was approved, the existing recreational opportunities of hiking, picnicking and camping can be expanded and be made available to more visitors.

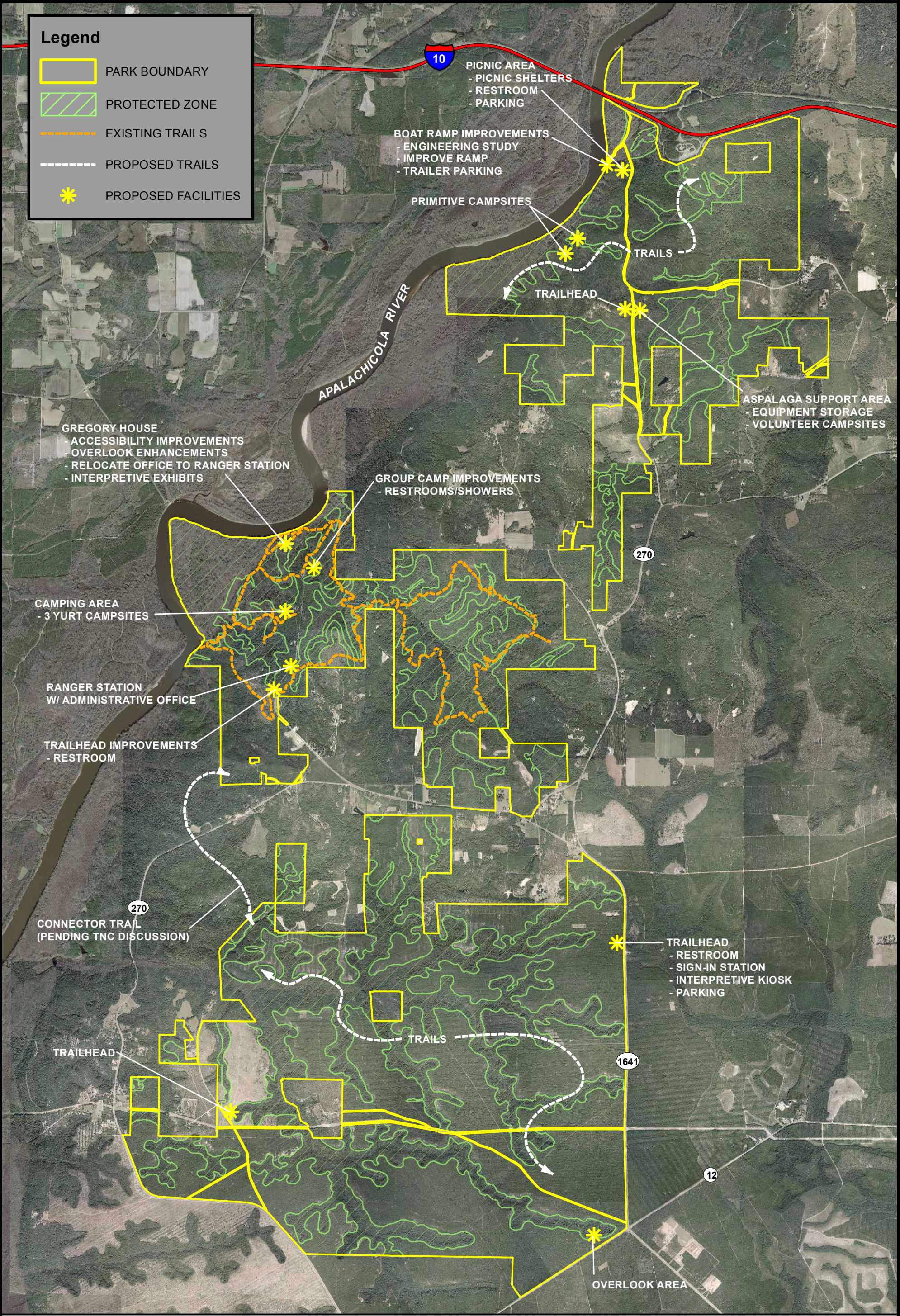
Objective: Continue to provide the current repertoire of three interpretive, educational and recreational programs on a regular basis.

Varieties of interpretive programs are currently offered to park visitors through ranger led tours, presentations and hikes. The most popular tour is of the historic Gregory House, with tours being offered multiple times each day. The park also provides regular guided nature walks and talks that focus on the plants and animals found in the park as well as resource management efforts designed to protect them. These programs will continue to be offered to park visitors.

Objective: Develop four new interpretive, educational and recreational programs.

Improvements to the interpretive programs and facilities at Torreya State Park should begin with an update to the park's interpretive plan. This document should include an evaluation of the existing interpretive efforts and provide recommendations for new programs, exhibits, signage, publications and special events that are consistent with the purpose and significance of the park.

Interpretation of the CCC era and of the evolution of the state park since its construction in the 1930s should be a feature of the park's interpretive program. For this purpose, expansion of the interpretive activities conducted at the Gregory House is proposed. Once the park administrative office is relocated to the proposed



ranger station, as discussed below, this space within the Gregory House could be used to interpret the CCC era as well as the unique species and biological communities that reside within the park. Some of the new exhibits could also interpret the more inaccessible park facilities such as the confederate gun pits, the ravines and slopes, and the second story of the Gregory House.

As discussed above, new interpretive facilities are also recommended at strategic locations throughout the trail network. Interpretive signs, brochures and kiosks should be used to educate visitors about the abundant natural and cultural resources that surround them.

A special interpretive area is proposed within the Sweetwater Tract to highlight the ongoing sandhill restoration project. A stabilized parking area with interpretive displays and restroom is recommended directly off State Road 1641. The interpretive signage should inform visitors why the restoration project is taking place, how it will be accomplished, what changes they can expect to see over time, and when it will be completed. This area should also serve as a trailhead for hikers.

Visitor education and interpretation regarding the proper storage and disposal of food and garbage will be conducted to prevent the habituation of bears to humans. Though it is not currently a problem, efforts should be made to obtain bear-proof garbage cans and dumpsters when funds become available as a preventative measure. The FFWCC will be consulted for recommendations regarding bear management measures to be taken at the park.

Proposed Facilities

Capital Facilities and Infrastructure

Goal: Develop and maintain the capital facilities and infrastructure necessary to implement the recommendations of the management plan.

As one of Florida's original CCC parks, Torreya State Park holds a significant place in the history of the Florida State Park system. Since its inception, the park has been known as a quiet, rural park with scenic trails, peaceful picnic area and relaxing campground. As described below, new park development will center on the park's trail network including the creation of a long distance hiking trail running north and south along the high bluffs overlooking the Apalachicola River. Picnicking and camping will also continue to be popular pursuits, and there is a great opportunity to improve the interpretation of the natural and cultural resources.

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the

recreational opportunities that visitors enjoy while in the park, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of recommended improvements and new facilities needed to implement the conceptual land use plan for Torreya State Park:

Objective: Maintain all public and support facilities in the park.

All capital facilities, trails and roads within the park will be kept in proper condition through the daily or regular work of park staff and/or contracted help.

Objective: Improve four existing facilities and sixteen miles of trail.

Major repair projects for park facilities may be accomplished within the 10-year term of this management plan, if funding is made available. These include the modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by DRP). The following discussion of other recommended improvements and repairs are organized by use area within the park.

Trails: The existing hiking trail in the park is a 16-mile system. Much of the trail was constructed and is maintained by the Florida Trail Association as a single use-hiking trail. As discussed previously, erosion problems are evident along certain sections of the hiking trail and measures to address those problems are ongoing. These trails are popular with recreational hikers because the steep terrain provides a unique and high-quality hiking experience, found rarely in Florida. Shared uses of these hiking trails are not recommended in order to preserve the quality experience currently provided by the single use trail, and to address the environmental and physical concerns discussed below.

Trailhead: The existing trailhead located just inside the main entrance gate needs enhancement. The parking area should be stabilized to reduce the effect of erosion and a restroom and sign-in station should be added to better support the existing trail network.

Gregory House: An accessible path is recommended to navigate visitors around the north side of the Gregory House to the back porch and to the overlook area behind the house. An accessible ramp, or possibly an ADA-compliant lift, is recommended on the west side of the breezeway to offer universal access to the first floor of the house and the administrative office/gift shop. Enhancements are also recommended for the overlook area behind the house where heavy foot traffic has compacted the soil and killed the grass. Recommendations include hardening the site by constructing an observation deck or brick patio with guardrails along the edge of the bluff.

Group Camps: Restroom and shower upgrades are recommended for the two existing group camps within the park.

Miscellaneous: This plan also proposes the replacement of the existing power-lines with underground ones, and the revegetation of the existing easement corridors.

Objective: Construct twenty-one new facilities and approximately forty miles of trail.

Trails: Torreya State Park has grown in acreage fivefold since the previous management plan was approved in 1999. An opportunity exists to expand the trail network into one of the premier hiking destinations in the state. It is envisioned that the park will offer a variety of trail experiences including short nature trails, lengthier looped trails for day hikes, and a long distance hiking trail running north and south along the ridge overlooking the Apalachicola River that connects all the park properties for multi-day backpacking excursions. All together, the total length of potential new trail is up to 40 miles.

The trail layout shown on the Conceptual Land Use Plan (CLUP) is preliminary and purely conceptual. The purpose of displaying a conceptual trail layout is to reinforce the vast potential for trail development and the desire to connect all the park properties with a contiguous trail system. One important trail connection involves routing a trail through a portion of the adjacent Apalachicola Bluffs and Ravines Preserve. DRP will coordinate with The Nature Conservancy to establish a hiking trail easement and determine the best possible alignment through this property, ensuring that the hiking trail does not interfere with any of their land management activities. In addition, other portions of some trail may need to be briefly routed along road right-of-ways until future land acquisitions offer better trail connection options.

New trail development and associated signage should display and interpret the diversity of resources, topography and vistas the Apalachicola region has to offer. The park is located in the middle of a United States biodiversity hotspot with diverse and fragile resources. There is already evidence of erosion problems associated with poorly placed logging roads/jeep trails that were cut by previous landowners. All of the ravines and slope forests at Torreya State Park, especially within the Sweetwater Tract, are exceptionally prone to destructive erosion which not only destroys slopes but more importantly adversely impacts streams through siltation. Due to the uniqueness of the terrain, fragility of the soils, and significance of the resources, a professionally developed comprehensive trail master plan is required to ensure the long-term sustainability of an excellent trail system. Siting of the trails on the Sweetwater Tract will be recommended as part of the trails master plan. This plan should address existing trail erosion, ongoing natural community restoration projects, provide a sustainable trail design for new trails, recommend

trail construction and maintenance techniques, estimate costs of implementation, and discuss proper trail management.

Future trail development will need to employ building techniques that incorporate proven erosion control measures that may include footbridges, switchbacks, steps, guardrails and possibly suspension bridges at appropriate locations. Where necessary, it may be necessary to reroute existing trails. Due to the complexity and fragility of the ravine resources, comprehensive planning and design will be necessary before accurate cost estimates can be determined for trail development. Moreover, the opening of new trails will be dependent on adequate funding.

Interpretive signage is recommended at locations throughout the trail network to inform and educate the public regarding resource management activities occurring at the park and incorporating the larger preservation, stewardship, land use and cultural resource issues related to this park. Observation platforms are also recommended at appropriate scenic locations along these trails. Where fencing and overlook platforms will be installed, visitors should be informed of the reasons for the restrictions on access through interpretive signs and staff contact.

Coordination with Florida Gas Transmission Company and Liberty County will also be necessary to establish trail crossings over the existing gas pipeline and county roads, respectively. Moreover, during hunting season, a portion of these trails will be closed for safety reasons since the pipeline corridor contains hunting leases.

Trailheads: Additional trailheads are proposed for the newer properties to provide access and support for the expansion of the trail network. Proposed trailhead locations are identified on the CLUP but these locations may be altered following the development of the trail master plan.

The long distance backpacking trail should be anchored with a trailhead at both ends of the park. The southern trailhead is proposed near the southwestern corner of the Sweetwater Tract off Dannie Black Road. The northern trailhead is recommended for the area across the road from the proposed support area within the Aspalaga Tract. Recommended facilities at each trailhead include a parking area, restroom, interpretive signs and a sign-in station.

An additional trailhead within the Sweetwater Tract located off State Road 1641 is proposed to serve hikers. Recommended facilities include stabilized parking, restroom and sign-in station. This area will also feature an interpretive kiosk that explains the ongoing sandhill restoration effort.

An observation platform overlooking a steephead ravine, one of the steepest in the park, is recommended for the southeast corner of the Sweetwater Tract off State Road 12. A small parking lot and interpretive kiosk are proposed for the observation area to provide visitors with an impressive example of the extensive ravine system. Guardrails should be placed where appropriate around the observation area for visitor safety.

Weeping Ridge Camping Area: A few years ago, DRP conducted a trial on the appropriateness of YURTs as a camping option. One YURT was constructed in the camping area and the results have been outstanding. The YURT remains popular with campers year-round and has proven easy for staff to maintain. Therefore, the campground should be expanded to include up to three additional YURTs.

In addition, the camper registration office should be relocated to the proposed ranger station once it is constructed. This will free up additional space in the recreation hall for camper use.

Primitive campsites: Along the trail system, a series of primitive campsites are recommended at strategic locations to support multi-day hikes. At minimum, each campsite should provide designated tent sites and fire ring. Some campsites may also offer a picnic table, restroom and/or simple shelter to provide protection from bad weather. Proposed locations are identified on the CLUP, but the exact locations should be determined during the development of the trail master plan. In addition, these locations should be reviewed by the Florida Department of State, Division of Historical Resources (DHR).

Aspalaga Boat Ramp: With the addition of the Aspalaga Tract, the park inherited an unimproved boat ramp known as Aspalaga Landing. Due to the fluctuation of the river level throughout the year, this area can be completely submerged at times. Improving the entrance road, shoreline, parking area and boat ramp is recommended to help facilitate circulation, provide additional boat trailer parking, and reduce erosion and stormwater concerns along the entrance road and in the parking area.

Bluff Picnic Area: A new picnic area is proposed for the bluff overlooking the Aspalaga boat ramp. This area provides a dramatic vista of the Apalachicola River and its expansive floodplain. Visitors to the boat ramp will also be able to utilize the proposed picnic and restroom facilities. Recommended improvements for this area include two large picnic shelters, a restroom, interpretive signage, and stabilized parking.

Ranger Station: A ranger station is needed to provide a visitor contact facility, camper registration area and adequate space for the park administrative office.

Relocating the administrative office from the Gregory House would allow the expansion of interpretive activities there. The recommended location for the proposed ranger station is along the park road approximately 2500 feet inside the main entrance gate, as identified on the CLUP.

Shop/Residence Areas: Two satellite support areas are recommended at opposite ends of the park to enhance the ability to secure equipment, conduct resource management activities and manage visitor use areas most efficiently. One support area is recommended for the Aspalaga Tract, across the street from the proposed trailhead. The other should be located in the Sweetwater Tract. Its location will be sited following the development of the trails master plan. Recommended facilities at each support area include an equipment storage shelter, flammable storage building, and volunteer campsites. The support facilities should come early in the development process to ensure proper management of the park. If the demand for permanent staff presence and more support facilities arise in the future, the satellite support areas should also feature staff residences and shop buildings.

Facilities Development

Preliminary cost estimates for these recommended facilities, improvements are provided in the Implementation Component of this plan. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist DRP in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes. New facilities and improvements to existing facilities recommended by the plan include:

Recreation Facilities

Trails

Hiking trail (up to 40 miles)
Interpretive kiosks throughout trail system (20)
Observation platform (1)

Trailheads

Trailhead Improvements

- Restroom
- Sign-in station

Sweetwater Trailhead

- Parking (up to 15 vehicles)
- Restroom
- Interpretive kiosk
- Sign-in station

Trailhead at Sandhill Restoration Interpretive Area

- Stabilized parking (up to 20 vehicles)
- Restroom
- Sign-in station
- Interpretive kiosk

Aspalaga Trailhead

- Parking (up to 15 vehicles)
- Restroom
- Interpretive kiosk
- Sign-in station

Ravine Overlook Area

- Observation platform
- Parking area (up to 15 vehicles)
- Interpretive kiosk

Gregory House

- Interpretive exhibits
- Accessible walkway (250 ft.)
- Access ramp to Gregory House breezeway
- Observation deck/patio

Weeping Ridge Camping Area

- YURT campsites (3)

Primitive Campsites (3)

Aspalaga Boat Ramp

- New boat ramp
- Stabilized boat trailer parking

Bluff Picnic Area

- Large picnic shelters (2)
- Restroom
- Interpretive signage
- Stabilized parking (up to 30 vehicles)

Support Facilities

Ranger station w/administrative office

Shop/Residence Areas

- 4-bay equipment storage shelters (2)

- Flammable storage buildings (2)
- Volunteer campsites (4)

Existing Use and Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 6).

The recreational carrying capacity for this park is a preliminary estimate of the number of users the unit could accommodate after the current conceptual development program has been implemented. When developed, the proposed new facilities would approximately increase the unit's carrying capacity as shown in Table 6.

Table 6--Existing Use and Recreational Carrying Capacity

Activity/Facility	Existing Capacity ¹		Proposed Additional Capacity		Estimated Recreational Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
Trails						
Hiking	120	240	160	160	280	400
Nature	15	60			15	60
Picnicking	128	252	160	160	288	412
Boating	20	40	20	40	40	80
Camping						
Family	246	246	18	18	264	264
Primitive	24	24	24	24	48	48
Group Camping	60	60			60	60
Gregory House Tours	40	160			40	160
TOTAL	653	1082	382	402	1035	1484

¹Existing capacity revised from approved plan to better DRP guidelines.

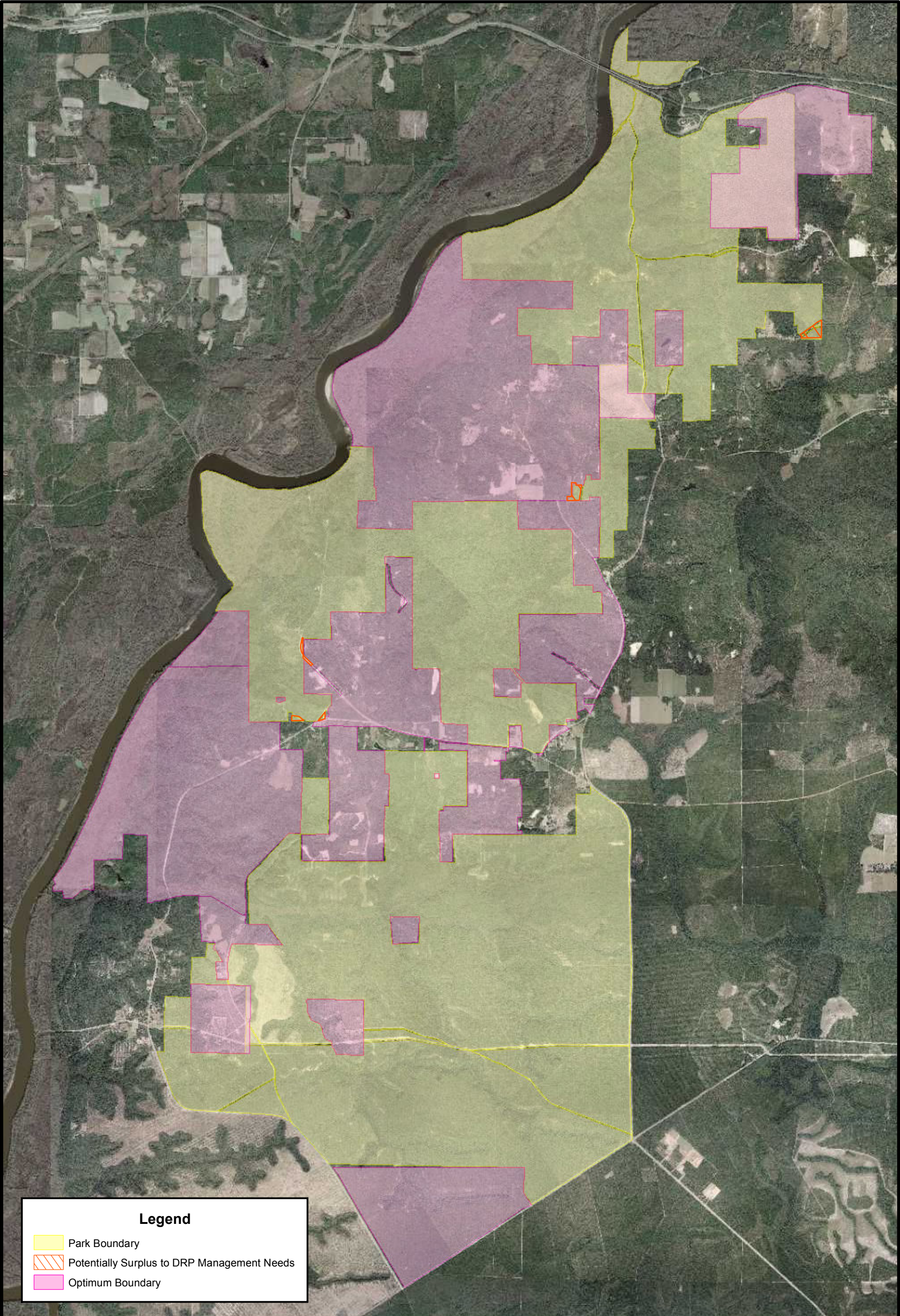
Optimum Boundary

The optimum boundary map reflects lands that have been identified as desirable for direct management by DRP as part of the state park. These parcels may include public as well as privately owned lands that improve the continuity of existing parklands, provide the most efficient boundary configuration, improve access to the park, provide additional natural and cultural resource protection or allow for future expansion of recreational activities. The map also identifies lands that are potentially surplus to the management needs of DRP. As additional needs are identified through park use, development, or research, and changes to land use on adjacent private property occurs, modification of the park's optimum boundary may be necessary.

Identification of parcels on the optimum boundary map is intended solely for planning purposes. It is not to be used in connection with any regulatory purpose. Any party or governmental entity should not use a property's identification on the optimum boundary map to reduce or restrict the lawful rights of private landowners. Identification on the map does not empower or suggest that any government entity should impose additional or more restrictive environmental land use or zoning regulations. Identification should not be used as the basis for permit denial or the imposition of permit conditions.

Approximately 9,000 acres of land are identified in the optimum boundary for Torreya State Park. These parcels are primarily the essential remaining parcels of the Florida Forever Apalachicola River land acquisition project, or are lands not in the project boundary that, if acquired, would connect the three separated areas of the current park property. Park management also needs access to certain areas of the park that are effectively cut off from vehicular access by ravines, such as on the north side of the Sweetwater Tract. DRP is exploring all options to obtain access, including acquisitions of easements or fee-simple purchase.

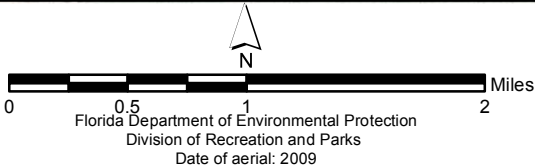
DRP identifies several parcels as potentially surplus. Linear infrastructure such as roads or utility easements severs these small parcels from the primary park boundary complicating land management activities.



Legend

-  Park Boundary
-  Potentially Surplus to DRP Management Needs
-  Optimum Boundary

TORREYA STATE PARK



OPTIMUM BOUNDARY MAP

IMPLEMENTATION COMPONENT

The resource management and land use components of this management plan provide a thorough inventory of the park's natural, cultural and recreational resources. They outline the park's management needs and problems, and recommend both short and long-term objectives and actions to meet those needs. The implementation component addresses the administrative goal for the park and reports on the Division of Recreation and Parks (DRP) progress toward achieving resource management, operational and capital improvement goals and objectives since approval of the previous management plan for this park. This component also compiles the management goals, objectives and actions expressed in the separate parts of this management plan for easy review. Estimated costs for the ten-year period of this plan are provided for each action and objective, and the costs are summarized under standard categories of land management activities.

MANAGEMENT PROGRESS

Since the approval of the last management plan for Torreya State Park in 1999, significant work has been accomplished and progress made towards meeting DRP's management objectives for the park. These accomplishments fall within three of the five general categories that encompass the mission of the park and DRP.

Acquisition

- Added 11,073 acres to the park through multiple acquisitions since 1999. This represents a fivefold increase in acreage.

Park Administration and Operations

- Park Manager position upgraded from a Park Manager I to a Park Manager II.
- Park Biologist position (shared with Florida Caverns State Park) has been added
- Park Ranger position has been added
- Type 6 and Type 7 fire engines have been acquired.

Resource Management

Natural Resources

- In the Sweetwater and Aspalaga Tracts, nearly 60 new burn zones have been surveyed, mapped and firebreaks created. To date, nine of these new burn zones have been successfully burned. Sweetwater zones are then used as wiregrass donor sites for adjacent areas.
- The uplands in the Aspalaga and Sweetwater tracts were planted in off-site pine species prior to state acquisition. Nearly 600 acres of these pines have been removed and the sites re-planted in wiregrass and longleaf pine.
- A severely eroded nine-acre clay pit on the park has been bermed, re-graded and restored to wiregrass and longleaf pine.
- A large erosion problem at a Steephead ravine on Danny Black Road was corrected with a concrete stormwater retention basin.

- The distribution of federally endangered Apalachicola rosemary on the Sweetwater tract has been surveyed and mapped. Rosemary study plots have been established in a Sweetwater restoration zone.
- Approximately 100 torreyia tree seedlings from Atlanta Botanical Garden have been out-planted on the park. Locations of surviving wild torreyas have been mapped and recorded using GPS equipment.
- Hydrological monitoring equipment has been installed at Sweetwater to document changes resulting from sandhill restoration.
- Over 100 loblolly pines have been felled to control southern pine beetle infestation.
- The population of feral hogs has been greatly reduced in the Sweetwater Tract. Appropriate firearms and six hog traps have been obtained. Removal of hogs in the Apalachicola floodplain and Rock Creek basin is ongoing.
- Occurrence of woody exotic plant species on the park has been reduced to maintenance control levels.
- Several hundred invasive, off-site oaks have been girdled and killed in burn zones TY-A, TY-B, TY-K, TY-H and TY-J.

Cultural Resources

- The “Slave Cemetery” and “Ferry Master” sites have been documented and recorded in the Department of State, Division of Historical Resources database.
- Historic Gregory House has been re-roofed and the windows restored. Interior and exterior has also been painted.
- The Confederate gun pits have been mapped in detail.

Recreation and Visitor Services

- Several trails have been re-routed to correct erosion issues.
- Park staff provides individualized interpretive programs for schools, church groups, 4-H, university extension and other special park visitors.
- Park conducts an annual Candlelight Tour special event in addition to the daily and weekend staff-guided tours of the Gregory House.

Park Facilities

- Park entrance drive has been re-paved.
- An ADA-approved restroom was completed in the campground.
- Asbestos siding was removed from the yew Pavilion, barracks and Park Manager’s residence.

MANAGEMENT PLAN IMPLEMENTATION

This management plan is written for a timeframe of ten years, as required by Section 253.034 Florida Statutes. The Ten-Year Implementation Schedule and Cost Estimates (Table 7) summarize the management goals, objectives and actions that are recommended for implementation over this period, and beyond. Measures are

identified for assessing progress toward completing each objective and action. A period for completing each objective and action is provided. Preliminary cost estimates for each action are provided and the estimated total costs to complete each objective are computed. Finally, all costs are consolidated under the following five standard land management categories: Resource Management, Administration and Support, Capital Improvements, Recreation Visitor Services and Law Enforcement.

Many of the actions identified in the plan can be implemented using existing staff and funding. However, a number of continuing activities and new activities with measurable quantity targets and projected completion dates are identified that cannot be completed during the life of this plan unless additional resources for these purposes are provided. The plan's recommended actions, periods and cost estimates will guide DRP's planning and budgeting activities over the period of this plan. It must be noted that these recommendations are based on the information that exists at the time the plan was prepared. A high degree of adaptability and flexibility must be built into this process to ensure that DRP can adjust to changes in the availability of funds, improved understanding of the park's natural and cultural resources, and changes in statewide land management issues, priorities and policies.

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing DRP's annual legislative budget requests. When preparing these annual requests, DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 7 may need to be adjusted during the ten-year management planning cycle.

Table 7
Torreya State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 1 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal I: Provide administrative support for all park functions.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Continue day-to-day administrative support at current levels.	Administrative support ongoing	C	\$665,000
Objective B	Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.	Administrative support expanded	UFN	\$247,000
Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Restore natural hydrological conditions and function to approximately 200 acres of sandhill natural community per year.	# Acres restored or with restoration underway	LT	\$277,000
Objective B	Correct erosion problems affecting the old park entrance road corridor, stone bridge and Rock Creek bridge, and occurring on unimproved roads and trails.	# Projects Completed	C	\$276,000
Action 1	Develop and implement a stormwater management plan to stabilize and restore the historic land reclamation drainage system.	Plan Developed/Implemented	LT	\$250,000
Action 2	Identify, map and monitor erosion prone areas and continue to re-route roads or trails, install water bars, culverts or low water crossings and implement other erosion control measures to address small-scale erosion problems, as needed.	# Projects Completed	C	\$26,000

* 2011 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 7
Torreya State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 2 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal III: Restore and maintain the natural communities/habitats of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Within 10 years have 4700 acres of the park maintained within optimal fire return interval.	# Acres within fire return interval target	C	\$191,000
Action 1	Develop/update annual burn plan.	Plan updated	C	\$16,000
Action 2	Manage fire dependent communities for ecosystem function, structure and processes by burning between 500-1000 acres annually.	Average # acres burned annually	C	\$175,000
Objective B	Conduct habitat/natural community restoration activities on 2000 acres of sandhill community.	# Acres restored or with restoration underway	UFN	\$582,500
Action 1	Update the Sweetwater Tract restoration plan, as needed.	Plan developed/updated	C	\$6,000
Action 2	Restore 20 acres of sandhill community annually	# Acres with restoration underway	ST	\$57,600
Action 3	Restore 180 acres of sandhill community annually	# Acres with restoration underway	UFN	\$518,900
Objective C	Conduct natural community improvement activities on approximately 20 acres of upland pine community by removing off-site hardwoods.	# Acres improved or with improvements underway	LT	\$20,000
Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Continue to compile and update baseline data on imperiled plant and animal species that occur on park property.	Lists updated	C	\$45,000
Objective B	Monitor and document 2 selected imperiled animal species in the park.	# Species monitored	C	\$7,000
Action 1	Implement monitoring protocols for Sherman's fox squirrel and gopher tortoises in conjunction with the completion of restoration activities in upland natural communities.	# Species monitored	C	\$7,000
Objective C	Monitor and document 3 selected imperiled plant species in the park.	# Species monitored	C	\$17,500
Action 1	Develop monitoring protocols for 3 selected imperiled plant species including the torreya tree, Florida yew and Apalachicola rosemary.	# Protocols developed	ST	\$7,000
Action 2	Implement monitoring protocols for the torreya tree and Apalachicola rosemary	# Species monitored	C	\$7,000
Action 3	Document distribution of Florida yew on park property	# of individuals introduced	ST	\$3,500
Objective D	Restore priority imperiled species population within the park	# of individuals introduced or translocated	LT	\$3,500
Action 1	In cooperation with FFWCC, research and develop specific management plans for the highest priority imperiled species likely to be impacted by management actions.	Research conducted	ST	\$3,500

* 2011 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 7
Torreya State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 3 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintaince-control.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Annually treat 2 acres of exotic plant species in the park.	# Acres treated	C	\$129,500
Action 1	Update and implement exotic plant management annual work plan.	Plan Updated/Implemented	C	\$125,000
Action 2	Study the feasibility of controlling Japanese climbing fern along the river and feeder streams within the park.	Study Complete	ST	\$4,500
Objective B	Implement control measures on 3 exotic and nuisance animal species in the park.	# Species for which control measures implemented	C	\$290,000
Action 1	Obtain USDA Wildlife Services contract for feral hog control	Contract obtained; # animals controlled	ST	\$275,000
Action 2	Monitor impacts of feral hog activity on steephead streams and other wetland areas	Monitoring Ongoing	C	\$15,000
Action 3	Continue removal of armadillos and coyotes.	# Animals Removed	C	UNK
Goal VI: Protect, preserve and maintain the cultural resources of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Assess and evaluate 79 of 79 recorded cultural resources in the park.	Documentation complete	LT	\$110,300
Action 1	Complete 79 assessments/evaluations of archaeological sites and prioritize preservation and stabilization projects.	Assessments complete	LT	\$5,300
Action 2	Complete 7 Historic Structures Reports (HSR's) for historic buildings and cultural landscape. Prioritize stabilization, restoration and rehabilitation projects.	Reports and priority lists completed	ST	\$105,000
Objective B	Compile reliable documentation for all recorded historic and archaeological sites.	Documentation complete	LT	\$98,100
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.	# Sites recorded or updated	ST	\$10,500
Action 2	Complete a predictive model for high, medium and low probability of locating archaeological sites within the park.	Probability Map completed	ST	\$46,400
Action 3	Develop and implement cyclical maintenance programs for the park's historic New Deal-era structures	# Programs implemented	C	\$32,000
Action 4	Conduct 15 oral history interviews.	# Interviews completed	LT	\$5,400
Action 5	Compile a park administrative history.	Report completed	ST	\$3,800
Objective C	Bring 16 of 79 recorded cultural resources into good condition.	# Sites in good condition	LT	\$33,400
Action 1	Design and implement regular monitoring programs for all 79 cultural sites	# Sites monitored	C	\$1,400

* 2011 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 7
Torreya State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 4 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal VII: Provide public access and recreational opportunities in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain the park's current recreational carrying capacity of 1082 users per day.	# Recreation/visitor opportunities per day	C	\$997,500
Objective B	Expand the park's recreational carrying capacity by 402 users per day.	# Recreation/visitor opportunities per day	UFN	\$370,600
Action 1	Develop new hiking, camping, and picnicking opportunities in the park.	# Recreation/visitor opportunities per day	UFN	\$375,600
Objective C	Continue to provide the current repertoire of 3 interpretive, educational and recreational programs on a regular basis.	# Interpretive/education programs	C	\$22,500
Objective D	Develop 4 new interpretive, educational and recreational programs.	# Interpretive/education programs	UFN	\$20,000
Action 1	Update and implement the park's Statement for Interpretation.	Document completed/implemented	ST	\$5,000
Action 2	Develop and implement new interpretive programs focused on the steephead ravines and their ecology, the Cody Scarp, the CCC history of the park and the importance of the protected public and private land on the river for preservation of rare plant and animal species, and the protection of the Appalachicola River.	# Programs implemented	LT	\$15,000
Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain all public and support facilities in the park.	Facilities maintained	C	\$498,750
Objective B	Continue to implement the park's transition plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.	Plan implemented	LT	\$100,000
Objective C	Improve and repair 4 existing facilites, enhance 16 miles hiking of trail and upgrade the park's interpretive exhibits.	# Facilities/Miles of Trail/# of exhibit improvements	UFN	\$70,000
Objective D	Construct 21 new facilities and up to 40 miles of new hiking trails.	# Facilities/Miles of trails	UFN	\$2,981,460
Objective E	Expand maintenance activities as existing facilities are improved and new facilities are developed.	Facilities maintained	UFN	\$185,300

* 2011 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 7
Torreya State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 5 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.		
Summary of Estimated Costs		
Management Categories		Total Estimated Manpower and Expense Cost* (10-years)
Resource Management		\$2,080,800
Administration and Support		\$912,000
Capital Improvements		\$3,835,510
Recreation Visitor Services		\$1,410,600
Law Enforcement Activities ¹		
	¹ Law enforcement activities in Florida State Parks are conducted by the DEP Division of Law Enforcement and by local law enforcement agencies.	

* 2011 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Addendum 1 – Acquisition History

Purpose of Initial Acquisition

The State Internal Improvement Board of the State of Florida (Board) purchased Torreya State Park for the use and benefit of the citizens of the State of Florida.

Sequence of Acquisition

On April 22, 1935, the Board acquired title interest in three properties with total area of 81.56-acres constituting the initial area of Torreya State Park. The Board purchased these properties with "Old Money."

In 1947, the Board conveyed title interest in Torreya State Park to the Florida Board of Forestry and Parks (FBFP). Just two years later, in 1949, FBFP transferred the title interest in Torreya State Park to Florida Board of Parks and Historic Memorials (FBPHM), predecessor to the Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP). On September 28, 1967, FBPHM transferred the title to the Trustees of the Internal Improvement Fund of the State of Florida (TIIF), predecessor to the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) for the use and benefit of the State of Florida.

After the initial purchase, the Trustees acquired additional parcels using Old Money, through dedications and transfers, using funds from Land Acquisition Trust Fund, CARL Preservation 2000, Preservation 2000 Additions and Inholdings, the Nature Conservancy Charitable Trust; and Florida Forever programs and added these parcels to Torreya State Park.

Lease Agreement:

On January 23, 1968, TIIF leased Torreya State Park to FBPHM for the purpose of developing, operating and maintaining the property for outdoor recreational, park, conservation, historic and related purposes under a 99-year generic lease, Lease No. 2324. This lease will expire on January 22, 2067. In 1988, a new lease number was assigned (Lease No. 3645) to Torreya State Park without changing any of the terms and conditions of Lease No. 2324.

According to Lease No. 2324, now Lease No. 3645, the DRP manages Torreya State Park for the purpose of developing, operating and maintaining the property for outdoor recreational, park, conservation, historic and related purposes.

Title Interest:

The Trustees hold fee simple title to Torreya State Park.

Special Conditions on Use

Torrey State Park is designated single-use to provide public outdoor recreation and other park related uses. Uses such as water resource development projects, water supply projects, storm-water management projects, and linear facilities and sustainable agriculture and forestry (other than those management activities specifically identified in this plan) are not consistent with the management purposes of the park.

Addendum 2 – Advisory Group Members and Report

Torreya State Park Advisory Group Members

The Honorable Jim Johnson
Chair
Liberty County Board of Commissioners
10811 NW SR 20
P.O. Box 399
Bristol, Florida 32321

Mr. Robert Presnell
Gadsden County Parks and Recreation
P.O. Box 1799
Quincy, Florida 32351

Steven Cutshaw, Park Manager
Torreya State Park
2576 NW Torreya Park Rd.
Bristol, Florida 32321

Dr. John Himes
Northwest Region Non-Game Biologist
Florida Fish and Wildlife Conservation
Commission
3911 Highway 2321
Panama City, Florida 32409-1658

Mr. Jason Love
Other Public Lands Forester
Florida Division of Forestry
865 Geddie Road
Tallahassee, FL 32304

Mr. Johnnie Eubanks
Liberty/Calhoun County Soil and Water
Conservation District
P.O. Box 454
Bristol, Florida 32321

Mr. Marcus Edwards
Gadsden County Soil and Water
Conservation District
5466 Hosford Highway
Quincy, Florida 32351

Mr. Mike Wisenbaker, Florida
Division of Historical Resources
500 South Bronough Street,
Mail Station 8
Tallahassee, Florida 32399-0250

Mr. Tyler Macmillan
Bureau Chief
Land Management Operations
Northwest Water Management District
81 Water Management Drive
Havana, FL 32333

Melissa Forehand
Apalachee Audubon Society
3414 Prock Drive
Tallahassee, Florida 32311

Mr. David Printiss
Director
Apalachicola Bluffs and Ravines Preserve
The Nature Conservancy
10394 Northwest Longleaf Drive
Bristol, FL 32321

Mr. William Gilley
Florida Trail Association
3500 Yarborough Road
Sneads, FL 32460

Dr. Clifford S. Bristol
15333 NW County Road 12
Bristol, Florida 32321

Torreya State Park Advisory Group Report

The Advisory Group meeting to review the proposed land management plan for Torreya State Park was held at the Apalachicola Bluffs and Ravines Preserve Angus Gholson Learning Center on May 19, 2011 at 9:00 AM.

Mr. Tyler Macmillan of the Northwest Florida Water Management District was represented by Ms. Leigh Brooks. Mr. Marcus Edwards of the Gadsden County Soil and Water Conservation District was represented by Mr. Robert Presnell. Dr. John Himes (Florida Fish and Wildlife Conservation Commission), Mr. Johnny Eubanks (Liberty/Calhoun County Soil and Water Conservation District), and Ms. Melissa Forehand (Apalachee Audubon Society) were not in attendance. Attending staff were Mr. Danny Jones, Mr. Steve Cutshaw, Mr. Mark Ludlow and Mr. Joe Blazina. All other Advisory Group members attended.

Mr. Blazina began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. He provided a brief overview of the Division's planning process and summarized public comments received during the previous evening's public workshop. He then asked each member of the advisory group to express his or her comments on the plans.

Summary of Advisory Group Comments

Mr. Presnell commented that the plan was great and very detailed. Mr. Presnell asked about water quality monitoring at Aspalaga Landing whether it be through the Northwest Florida Water Management District or DEP. He commented that Gadsden County has staff and equipment available and that they would be willing to work with the Division of Recreation and Parks to help improve the roadway leading to Aspalaga landing to help reduce erosion and sedimentation of the roadway.

Mr. Love commented that the plan was very well written. He recommended typographical and editorial changes to the plan, including striving for accuracy and consistency throughout each component of the plan. Mr. Love also discussed the Natural Community Restoration project on the Sweetwater Tract of the Park, commending park staff on their goals, but noted that it should mention in the plan that the restoration project is dependent upon market values of the timber being removed. He also commented that the focus in the plan is on the Sweetwater Restoration Project, and that there are other areas in the park that could benefit from thinning and other improvement activities.

Mr. Printiss commented that the management plan is a great piece of work, and the maps included are very well done with great information. As a neighbor and adjacent land manager, He discussed the importance of exotic species control in the area, especially of feral hogs. Mr. Printiss made suggestions regarding the natural community and desired future condition discussions in the plan. He commented on reducing the fire return interval for the sandhill natural community in the plan,

Torrey State Park Advisory Group Report

commenting that fire will play an extremely important role in the restoration project on the Sweetwater Tract of the park. Mr. Printiss also commented on the impact that deer are causing on the Florida torrey and Florida yew trees in the park. He discussed successful control measures such as allowing hunting that they have implemented on The Nature Conservancy's property. Staff responded that it is Division Policy to not allow hunting on any State Park property.

Dr. Bristol commented that the plan was great and he thoroughly enjoyed reading it. He discussed his concerns as an adjacent landowner, regarding unauthorized access by plant poachers and hunters. Dr. Bristol added to Mr. Printiss' discussion regarding the impact that deer have on the torrey and yew trees on his property as well, and the challenges there are for protecting the imperiled tree species. He commended the park staff for their hard work managing such a large park.

Ms. Brooks commented that the plan does a good job of providing information on restoration and appropriate visitor use at the park. She submitted written comments regarding items that could use additional attention in their relation to water resources. Ms. Brooks began her comments by announcing the Northwest Florida Water Management District's closing on an approximately 1,300 acre property in the vicinity of the park. The property will likely feature a parking area and other recreation facilities in the future off its entrance at Harry Donar Road. She also suggested that the discussion of the slope forest and seepage hydrology in the plan be updated according to recent research of these communities. She commended the inclusion of special management practices for the highly erodible soils and steep slopes within the park. Ms. Brooks also commented that the Apalachicola River is an alluvial stream, and consistency in naming of other stream types in the plan should be addressed. Regarding proposed land use at the park, Ms. Brooks suggested that wastewater and potable water sources should be discussed with any new facility development. She also commented that the construction of bridges to protect natural stream dynamics and aquatic life could actually be more detrimental due to them washing out and creating dams. Ms. Brooks suggested organizing a pre-application meeting with ERP Agency staff prior to any bridgework or construction that may impact drainage systems within the park.

Mr. Gilley commented that from a hiking standpoint, the plan is terrific. He agreed that Torrey State Park has potential to become one of the premier hiking destinations in the State. Mr. Gilley commented that he understood funding issues, and said that the Florida Trail Association was ready and willing to work with Park Staff to begin discussing improving and expanding the trail system at the park. The discussion of trails expanded to include Mr. Printiss, Mr. Custshaw, Mr. Love and Ms. Brooks, siting the connector trail through TNC property. Mr. Printiss responded there would not be a problem with a connector trail, but it would not be able to interfere with any management activities on TNC's property.

Torreya State Park Advisory Group Report

Mr. Ludlow commented that he is happy with the final product of the plan, and will continue to work towards consistency, accuracy and getting it up to date as it moves forward.

Mr. Cutshaw commented that the final product of the plan is very well done, and thanked everyone for their hard work and dedication to it.

Mr. Wisenbaker commented that Torreya State Park is one of his favorite in the State, and was happy to be able to provide comments on the plan. He stated that he did not have any severe criticism of the plan, and submitted written comments for review as the plan continues to move forward. Mr. Wisenbaker commented that park staff should continue to monitor and clear vegetation from the slave cemetery, and continue to work to stabilize archaeological sites at the park. As the first recorded archaeological site in Gadsden County, He suggested that the Park should consider nominating Aspalaga Mound for the National Register of Historic Places. Mr. Wisenbaker commended the park staff for their thorough and knowledgeable job at interpreting the resources at the park, and that they should continue to do so.

Summary of Written Comments

Dr. Himes was not able to attend the advisory group meeting, but did submit written comments of the plan. His comments included typographical and editorial changes to the plan, as well as discussion. Dr. Himes commented that further discussion is warranted in the Floodplain Swamp natural community description, regarding the impacts of level of the river on the natural community, and if it is controllable. He also commented that monitoring the lone bald eagle nest in the park is worthwhile, but it does not contribute much to the goal of maintaining, improving, or restoring imperiled species populations and habitats in the park because the eagles are largely dependent on resources outside the park (e.g., the river). He suggested that while the nest monitoring should continue, monitoring an additional imperiled animal species (in addition to the gopher tortoise) would provide more useful baseline data. Dr. Himes also suggested that any new trails development at the park should be extremely conscious to go through areas with the least imperiled plant species, to avoid illegal collecting and damage due to foot traffic. He also suggested ensuring any new development areas (campsites, picnic areas, ranger station, etc.) feature bear proof trash cans and signage to not feed the wildlife.

Staff Recommendations

Suggestions received from the Advisory Group meeting resulted in revisions to the draft management plan. The Resource Management Component and Land Use Component now contain updated language concerning the newest land acquisitions

Torrey State Park Advisory Group Report

and their acreages at the park. The natural community description has been added for terrestrial cave. The desired future condition for sandhill natural community, the discussion on seepage hydrology, and imperiled species has also been revised. Information contained within the cultural resource table of the plan has been verified and corrected as necessary. In the Land Use Component, additional discussion was included regarding bear-proof trashcans and the proposed connector trail through TNC's property. Minor typographical and grammatical changes and corrections also resulted from the public workshop and Advisory Group review.

With these changes, DRP staff recommends approval of the proposed management plan for Torrey State Park

Notes on Composition of the Advisory Group

Florida Statutes Chapter 259.032 Paragraph 10(b) establishes a requirement that all state land management plans for properties greater than 160 acres will be reviewed by an advisory group:

"Individual management plans required by s. 253.034(5), for parcels over 160 acres, shall be developed with input from an advisory group. Members of this advisory group shall include, at a minimum, representatives of the lead land managing agency, co-managing entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official."

State park management plans are reviewed by advisory groups that are composed in compliance with these requirements. Additional members may be appointed to the groups, such as a representative of the park's Citizen Support Organization (if one exists), representatives of the recreational activities that exist in or are planned for the park, or representatives of any agency with an ownership interest in the property. Additional members may be appointed if special issues or conditions exist that require a broader representation for adequate review of the management plan. The Division's intent in making these appointments is to create a group that represents a balanced cross-section of the park's stakeholders. Decisions on appointments are made on a case-by-case basis by Division of Recreation and Parks staff.

Addendum 3 – References Cited

Torreya State Park References Cited

- Ashton R.E and P.S. Ashton. 1988. Handbook of Reptiles and Amphibians of Florida. Part One, The Snakes. Windward Publishing, Inc.
- Blaustein, Richard J. 2008. Biodiversity Hotspot: The Florida Panhandle. Bioscience, 58(9):784-790.
- Bureau of Economic and Business Research (BEBR), University of Florida. 2006. Florida Statistical Abstract 2006. Gainesville, Florida.
- Calhoun County. 2001. Calhoun County Future Land Use Map. Calhoun County, Florida.
- Cox, J.R., Kautz, M. MacLaughlin, and T. Hoehn. 1997. Preservation 2000 Act study; biodiversity conservation analysis. Florida Game and Fresh Water Fish Commission; Tallahassee, Florida.
- Florida Department of Environmental Protection. 2007. Florida State Park System Economic Impact Assessment for Fiscal Year 2006/2007. Tallahassee, Florida.
- Florida Department of State. Division of Historical Resources. Bureau of Archaeological Research. Florida Master Site File materials.
- Florida Natural Areas Inventory. 1997. Plants and Lichens, Vertebrates, Invertebrates, and Natural Communities tracked by FNAI.
- Fryman, Mildred. 1976 Gregory House Report. Tallahassee, FL. Prepared by the Florida Division of Archives, History and Records Management for use by the Florida Division of Recreation and Parks. File Copy.
- Gadsden County. 2006. Gadsden County Future Land Use Map. Gadsden County, Florida.
- Historic Property Associates. 1989. Cultural Resource Survey. New Deal Era Resources in Nine Florida State Parks. St. Augustine, FL.
- Jackson County. 2007. Jackson County Future Land Use Map. Jackson County, Florida.
- Kantola, A.T, and S.R. Humphrey. 1990. Habitat Use by Sherman's Fox Squirrel (*Sciurus niger shermani*) in Florida. Journal of Mammalogy. 71:411-419.
- Liberty County. 2000. Liberty County Future Land Use Map 2000-2010. Liberty County, Florida.

Torrey State Park References Cited

- Percy, G.W. 1972. Preliminary Report on Recent Archaeological Investigations in Torrey State Park, Liberty County, Florida. Tallahassee. File Copy.
- Percey, G.W. and M. K. Jones. 1976. Archaeological Survey of Upland Locales in Gadsden and Liberty Counties, Florida. Reprinted from Florida Anthropologist, 29:3. Pp. 105-125.
- Pritchard, P.C.H. 1979. Encyclopedia of turtles. TFH Publications, Neptune, New Jersey.
- Means, D. Bruce. 1991. Florida's steepheads:Unique Canyonlands. Florida Wildlife 45(3):25-28.
- Randazo, A.F. and D.S. Jones. 1997. The Geology of Florida. University Presses of Florida.
- Schwartz, M.W. and S.M. Herman. 1996. The plight of the Florida Torrey. Plant Conservation 10(1).
- U. S. Department of Commerce, Bureau of the Census. 2000. U. S. Census 2000.

Addendum 4 – Soil Descriptions

Map unit: 36 - Lucy-Orangeburg-Cowarts complex, 15 to 45 percent slopes

Component: Lucy (49%)

The Lucy component makes up 49 percent of the map unit. Slopes are 15 to 45 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine and fluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Orangeburg (21%)

The Orangeburg component makes up 21 percent of the map unit. Slopes are 15 to 45 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Cowarts (19%)

The Cowarts component makes up 19 percent of the map unit. Slopes are 15 to 45 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 45 inches during January, February, March, April, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 59 - Troup-Lakeland-Lucy complex, 2 to 8 percent slopes

Component: Troup (50%)

The Troup component makes up 50 percent of the map unit. Slopes are 2 to 8 percent. This component is on knolls on marine terraces on coastal plains, ridges on marine

Torrey State Park Soil Descriptions Gadsden County, Florida

terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Lakeland (21%)

The Lakeland component makes up 21 percent of the map unit. Slopes are 2 to 8 percent. This component is on ridges on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 59 - Troup-Lakeland-Lucy complex, 2 to 8 percent slopes

Component: Lucy (16%)

The Lucy component makes up 16 percent of the map unit. Slopes are 2 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine and fluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 63 - Troup-Nankin complex, 15 to 45 percent slopes

Component: Troup (50%)

The Troup component makes up 50 percent of the map unit. Slopes are 15 to 45 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer

Torrey State Park Soil Descriptions Gadsden County, Florida

is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Nankin (35%)

The Nankin component makes up 35 percent of the map unit. Slopes are 15 to 45 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of stratified loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 66 - Pickney, Dorovan and Bibb soils, frequently flooded

Component: Pickney (32%)

The Pickney component makes up 32 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains, flats on stream terraces on marine terraces on coastal plains, depressions on stream terraces on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Dorovan (29%)

The Dorovan component makes up 29 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on flood plains on marine terraces on coastal plains. The parent material consists of organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly

Torrey State Park Soil Descriptions Gadsden County, Florida

drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 66 - Pickney, Dorovan and Bibb soils, frequently flooded

Component: Bibb (25%)

The Bibb component makes up 25 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on flood plains on marine terraces on coastal plains. The parent material consists of stratified loamy and sandy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 8 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 69 - Lucy-Bonifay-Orangeburg complex, 5 to 8 percent slopes

Component: Lucy (38%)

The Lucy component makes up 38 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine and fluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Bonifay (28%)

The Bonifay component makes up 28 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low.

Torrey State Park Soil Descriptions Gadsden County, Florida

Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills, Upland Hardwood Hammock ecological site. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Orangeburg (22%)

The Orangeburg component makes up 22 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 2 - Albany sand, 0 to 5 percent slopes

Component: Albany (85%)

The Albany component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 percent. This component is in the R152AY004FL North Florida Flatwoods ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 4 - Alpin-Foxworth complex, 5 to 12 percent slopes

Component: Alpin (45%)

The Alpin component makes up 45 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains, hillslopes on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This

Torrey State Park Soil Descriptions Gadsden County, Florida

soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Foxworth (40%)

The Foxworth component makes up 40 percent of the map unit. Slopes are 5 to 8 percent. This component is on hillslopes on marine terraces on coastal plains, ridges on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during March. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 6 - Blanton sand, 0 to 5 percent slopes

Component: Blanton (85%)

The Blanton component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on hillslopes on marine terraces on coastal plains, ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 7 - Blanton sand, 5 to 8 percent slopes

Component: Blanton (80%)

The Blanton component makes up 80 percent of the map unit. Slopes are 5 to 8 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water

Torrey State Park Soil Descriptions Gadsden County, Florida

movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 8 - Brickyard clay loam, frequently flooded

Component: Brickyard (75%)

The Brickyard component makes up 75 percent of the map unit. Slopes are 0 to 2 percent. This component is on -- Error in Exists On --. The parent material consists of loamy and clayey alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 9 - Centenary sand, 0 to 5 percent slopes

Component: Centenary (85%)

The Centenary component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 14 - Dothan loamy sand, 0 to 2 percent slopes

Component: Dothan (84%)

The Dothan component makes up 84 percent of the map unit. Slopes are 0 to 2 percent. This component is on sand sheets on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer

Torrey State Park Soil Descriptions Gadsden County, Florida

is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 17 - Dothan-Fuquay complex, 8 to 12 percent slopes

Component: Dothan (40%)

The Dothan component makes up 40 percent of the map unit. Slopes are 8 to 12 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 17 - Dothan-Fuquay complex, 8 to 12 percent slopes

Component: Fuquay (35%)

The Fuquay component makes up 35 percent of the map unit. Slopes are 8 to 10 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 24 - Goldsboro loamy sand, 0 to 2 percent slopes

Component: Goldsboro (90%)

The Goldsboro component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage

Torrey State Park Soil Descriptions Gadsden County, Florida

class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. This component is in the R152AY004FL North Florida Flatwoods ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 26 - Foxworth sand, 0 to 5 percent slopes

Component: Foxworth (80%)

The Foxworth component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on sand sheets on marine terraces on coastal plains, hillslopes on sand sheets on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during March. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 27 - Fuquay loamy sand, 0 to 5 percent slopes

Component: Fuquay (85%)

The Fuquay component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on hillslopes on marine terraces on coastal plains, sand sheets on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R152AY004FL North Florida Flatwoods ecological site. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 30 - Ellore, Bibb, and Meggett soils, 0 to 3 percent slopes, frequently flooded

Component: Ellore (35%)

The Ellore component makes up 35 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria.

Component: Bibb (30%)

The Bibb component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Meggett (25%)

The Meggett component makes up 25 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of clayey. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 34 - Lakeland sand, 0 to 5 percent slopes

Component: Lakeland (85%)

The Lakeland component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 35 - Lakeland sand, 5 to 8 percent slopes

Component: Lakeland (85%)

The Lakeland component makes up 85 percent of the map unit. Slopes are 5 to 8 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 36 - Lakeland sand, 8 to 15 percent slopes

Component: Lakeland (90%)

The Lakeland component makes up 90 percent of the map unit. Slopes are 8 to 15 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 37 - Lakeland-Foxworth complex, 15 to 30 percent slopes

Component: Lakeland (50%)

The Lakeland component makes up 50 percent of the map unit. Slopes are 15 to 30 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Foxworth (40%)

The Foxworth component makes up 40 percent of the map unit. Slopes are 15 to 25 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during March. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 38 - Leefield loamy sand, 0 to 5 percent slopes

Component: Leefield (85%)

The Leefield component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 42 - Lucy sand, 0 to 5 percent slopes

Component: Lucy (85%)

The Lucy component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on hillslopes on sand sheets on marine terraces on coastal plains, ridges on sand sheets on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 47 - Torhunta-Lynn Haven-Croatan complex, frequently flooded

Component: Torhunta (35%)

The Torhunta component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains, marine terraces, coastal plains. The parent material consists of loamy and sandy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Lynn Haven (30%)

The Lynn Haven component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Torrey State Park Soil Descriptions Gadsden County, Florida

Component: Croatan (25%)

The Croatan component makes up 25 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of herbaceous organic material and/or loamy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, July, August, September, November. Organic matter content in the surface horizon is about 42 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 58 - Rutlege, Bibb, and Surrency soils, frequently flooded

Component: Rutlege (35%)

The Rutlege component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Bibb (30%)

The Bibb component makes up 30 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 58 - Rutlege, Bibb, and Surrency soils, frequently flooded

Component: Surrency (25%)

The Surrency component makes up 25 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 59 - Hosford mucky coarse sand, 2 to 8 percent slopes

Component: Hosford (80%)

The Hosford component makes up 80 percent of the map unit. Slopes are 2 to 8 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 10 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 63 - Stilson fine sand, 0 to 3 percent slopes

Component: Stilson (85%)

The Stilson component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 66 - Wahee and Ochlockonee soils, 0 to 3 percent slopes, occasionally flooded

Component: Wahee (45%)

The Wahee component makes up 45 percent of the map unit. Slopes are 0 to 3 percent. This component is on stream terraces on flood plains on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Ochlockonee (35%)

The Ochlockonee component makes up 35 percent of the map unit. Slopes are 0 to 3 percent. This component is on stream terraces on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 69 - Troup sand, 0 to 5 percent slopes

Component: Troup (85%)

The Troup component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on hillsides on marine terraces on coastal plains, ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 70 - Troup sand, 5 to 8 percent slopes

Component: Troup (80%)

The Troup component makes up 80 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains, hillsides on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY002FL Longleaf Pine-Turkey Oak Hills ecological site. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 71 - Pits

Component: Pits (98%)

Generated brief soil descriptions are created for major soil components. The Pits is a miscellaneous area.

Map unit: 72 - Lakeland sand, 30 to 85 percent slopes

Component: Lakeland (75%)

The Lakeland component makes up 75 percent of the map unit. Slopes are 30 to 85 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 73 - Foxworth-Hosford-Lucy complex, 8 to 25 percent slopes

Component: Foxworth (45%)

The Foxworth component makes up 45 percent of the map unit. Slopes are 8 to 25 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately

Torrey State Park Soil Descriptions Gadsden County, Florida

well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during March. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 73 - Foxworth-Hosford-Lucy complex, 8 to 25 percent slopes

Component: Hosford (25%)

The Hosford component makes up 25 percent of the map unit. Slopes are 3 to 12 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 10 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Lucy (20%)

The Lucy component makes up 20 percent of the map unit. Slopes are 8 to 25 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 75 - Brantley-Okeelala-Lucy complex, 8 to 45 percent slopes

Component: Brantley (35%)

The Brantley component makes up 35 percent of the map unit. Slopes are 8 to 35 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic

Torrey State Park Soil Descriptions Gadsden County, Florida

matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Okeelala (30%)

The Okeelala component makes up 30 percent of the map unit. Slopes are 8 to 45 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Lucy (25%)

The Lucy component makes up 25 percent of the map unit. Slopes are 8 to 25 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 78 - Lucy-Blanton-Cowarts complex, 8 to 45 percent slopes

Component: Lucy (35%)

The Lucy component makes up 35 percent of the map unit. Slopes are 8 to 45 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Torrey State Park Soil Descriptions Gadsden County, Florida

Component: Blanton (30%)

The Blanton component makes up 30 percent of the map unit. Slopes are 8 to 45 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Cowarts (25%)

The Cowarts component makes up 25 percent of the map unit. Slopes are 8 to 25 percent. This component is on hillslopes on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Addendum 5 – Plant And Animal List

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Southern maidenhair fern.....	<i>Adiantum capillus-veneris</i>	
Bicolored spleenwort.....	<i>Asplenium heterochroum</i>	
Ebony spleenwort	<i>Asplenium platyneuron</i>	
Southern lady fern	<i>Athyrium felix-femina</i>	
Southern grapefern.....	<i>Botrychium biternatum</i>	
Common grapefern.....	<i>Botrychium dissectum</i>	
Winter grape-fern.....	<i>Botrychium lumarioides</i>	
Rattlesnake fern.....	<i>Botrychium virginianum</i>	
Southern shield fern.....	<i>Dryopteris ludoviciana</i>	
Scouring rush.....	<i>Equisetum hymale</i>	
Japanese climbing fern*	<i>Lygodium japonicum</i>	
Sensitive fern.....	<i>Onoclea sensibilis</i>	
Bulbous adder's-tongue	<i>Ophioglossum crotalophoroides</i>	
Stalked adder's-tongue	<i>Ophioglossum petiolatum</i>	
Cinnamon fern.....	<i>Osmunda cinnamomea</i>	
Royal fern	<i>Osmunda regalis</i>	33
Resurrection fern.....	<i>Polypodium polypodioides</i>	
Christmas fern	<i>Polystichum acrostichoides</i>	
Shadow witch	<i>Ponthieva racemosa</i>	
Bracken fern	<i>Pteridium aquilinum</i>	
Cretan brake fern	<i>Pteris cretica</i>	
Meadow spikemoss	<i>Selaginella apoda</i>	
Gulf spikemoss	<i>Selaginella ludoviciana</i>	
Spring ladies' -tresses	<i>Spiranthes vernalis</i>	
Southern beech fern	<i>Thelypteris hexagonoptera</i>	
Hairy maiden fern.....	<i>Thelypteris hispidula</i> var. <i>versicolor</i>	
Widespread maiden fern	<i>Thelypteris kunthii</i>	
Ovate maiden fern	<i>Thelypteris ovata</i>	
Marsh fern.....	<i>Thelypteris palustris</i>	
Wood's false hellebore	<i>Veratum woodii</i>	
Blunt-lobed cliff fern.....	<i>Woodsia obtusa</i>	19

Gymnosperms

Eastern red cedar.....	<i>Juniperus virginiana</i>
Sand pine	<i>Pinus clausa</i>
Shortleaf pine.....	<i>Pinus echinata</i>
Slash pine	<i>Pinus elliotti</i>
Spruce pine.....	<i>Pinus glabra</i>
Longleaf pine	<i>Pinus palustris</i>

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Loblolly pine	<i>Pinus taeda</i>	
Florida yew	<i>Taxus floridana</i>	19
Torreya.....	<i>Torreya taxifolia</i>	19
Bald cypress	<i>Taxodium distichum</i>	

Angiosperms - Monocots

Autumn bentgrass	<i>Agrostis perennans</i>	
Foxtail	<i>Alopecurus carolinianus</i>	
Andropogon	<i>Andropogon gyrans</i>	
Common broomsedge	<i>Andropogon virginicus</i>	
Bushy beardgrass	<i>Andropogon glomeratus</i>	
Silver broomsedge	<i>Andropogon ternarius</i>	
Anthaenania	<i>Anthaenania villosa</i>	
Nodding-nixie	<i>Apteria aphylla</i>	
Green-dragon.....	<i>Arisaema dracontium</i>	
Pester-john.....	<i>Arisaema quinatum</i>	
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>	
Woolysheath threeawn	<i>Aristida lanosa</i>	
Geniculate slimspike threeawn.....	<i>Aristida longespica</i>	
Arrowfeather threeawn.....	<i>Aristida purpurascens</i>	
Wiregrass.....	<i>Aristida stricta</i>	
Cane	<i>Arundinaria gigantea</i>	
Common carpetgrass.....	<i>Axonopus affinis</i>	
Big carpetgrass	<i>Axonopus furcatus</i>	
Little quaking grass	<i>Briza minor</i>	
Watergrass	<i>Bulbostylis barbata</i>	
Hair-sedge.....	<i>Bulbostylis ciliatifolia</i>	
Carex	<i>Carex abscondita</i>	
Carex	<i>Carex amphibola</i>	
Baltzell's sedge	<i>Carex baltzellii</i>	2,21
Carex	<i>Carex blanda</i>	
Carex	<i>Carex bromoides</i>	
Carex	<i>Carex cephalophora</i>	
Carex	<i>Carex cherokeeensis</i>	
Carex	<i>Carex crebriflora</i>	
Carex	<i>Carex crus-corvi</i>	
Carex	<i>Carex dasycarpa</i>	
Carex	<i>Carex debilis</i>	
Carex	<i>Carex digitalis</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Carex	<i>Carex floridana</i>	
Carex	<i>Carex gracilescens</i>	
Carex	<i>Carex intumescens</i>	
Carex	<i>Carex jorii</i>	
Carex	<i>Carex louisianica</i>	
Carex	<i>Carex lurida</i>	
Carex	<i>Carex muhlenbergii</i>	
Carex	<i>Carex oxylepis</i>	
Carex	<i>Carex physorhyncha</i>	
Carex	<i>Carex striatula</i>	
Carex	<i>Carex styloflexa</i>	
Carex	<i>Carex tenax</i>	
Carex	<i>Carex tribuloides</i>	
Carex	<i>Carex typhina</i>	
Carex	<i>Carex venusta</i>	
Carex	<i>Carex willdenowii</i>	
River oats.....	<i>Chasmanthium latifolium</i>	
Spikegrass.....	<i>Chasmanthium sessiliflorum</i>	
Wild-taro*	<i>Colocasia esculenta</i>	
Dayflower.....	<i>Commelina virginica</i>	
Croomia	<i>Croomia pauciflora</i>	2
Cyperus	<i>Cyperus aristatus</i>	
Cyperus	<i>Cyperus croceus</i>	
Cyperus	<i>Cyperus retrorsus</i>	
Cyperus	<i>Cyperus surinamensis</i>	
Cyperus	<i>Cyperus tenuifolius</i>	
Cyperus	<i>Cyperus tetragonus</i>	
Orchard grass	<i>Dactylis glomerata</i>	
Southern crabgrass.....	<i>Digitaria ciliaris</i>	
Slender crabgrass	<i>Digitaria filiformis</i>	
Violet crabgrass	<i>Digitaria violescens</i>	
Barneyard grass	<i>Echinochloa crusgalli</i>	
Spike rush.....	<i>Eleocharis obtusa</i>	
Yardgrass	<i>Eleusine indica</i>	
Green-fly orchid	<i>Epidendrum conopseum</i>	
Pond lovegrass	<i>Eragrostis glomerata</i>	
Bigtop lovegrass	<i>Eragrostis hirsuta</i>	
Tufted lovegrass	<i>Eragrostis pectinacea</i>	
Indian lovegrass	<i>Eragrostis pilosa</i>	
Eragrostis.....	<i>Eragrostis refracta</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Purple lovegrass.....	<i>Eragrostis spectabilis</i>	
Silver plumegrass.....	<i>Erianthus alopecuroides</i>	
Bentawn plumegrass	<i>Erianthus contortus</i>	
Narrow plumegrass.....	<i>Erianthus strictus</i>	
Erythroides.....	<i>Erythroides querceticola</i>	
Trout lily	<i>Erythronium umbilicatum</i>	2
Nodding fescue	<i>Festuca obtusa</i>	
Fimbristylis	<i>Fimbristylis autumnalis</i>	
Fimbristylis	<i>Fimbristylis vahlii</i>	
Downy rattlesnake-plantain.....	<i>Goodyera pubescens</i>	21
Bearded skeletongrass	<i>Gymnopogon ambiguus</i>	
Crested coalroot	<i>Hexalectris spicata</i>	
Spider-lily	<i>Hyminocallis caroliniana</i>	
Swamp cutgrass.....	<i>Hypoxis leptocarpa</i>	
Juncus.....	<i>Juncus coriaceous</i>	
Path rush	<i>Juncus tenuis</i>	
Catchfly grass	<i>Leersia lenticularis</i>	
Rice cutgrass	<i>Leersia oryzoides</i>	
Whitegrass.....	<i>Leersia virginica</i>	
Carolina lily.....	<i>Lilium michauxii</i>	21
Turk's cap lily	<i>Lilium superbum</i>	
Twayblade.....	<i>Listera australis</i>	
Ryegrass	<i>Lolium perenne</i>	
Green adder's- mouth	<i>Malaxis unifolia</i>	19
Two-flowered melic.....	<i>Melica mutica</i>	
Camus	<i>Microstegium vimineum</i>	
Nimblewill	<i>Muhlenbergia schreberi</i>	
Woodsgrass.....	<i>Oplismenus setarius</i>	
Bahia*	<i>Panicum anceps</i>	
Panicum.....	<i>Panicum boscii</i>	
Panicum.....	<i>Panicum commutatum</i>	
Fall panicum	<i>Panicum dichotomiflorum</i>	
Panicum.....	<i>Panicum dichotomum</i>	
Panicum.....	<i>Panicum gymnocarpon</i>	
Panicum.....	<i>Panicum laxiflorum</i>	
Panicum.....	<i>Panicum oligosanthos</i>	
Panicum.....	<i>Panicum ovale</i>	
Panicum.....	<i>Panicum portoricense</i>	
Panicum.....	<i>Panicum rigidulum</i>	
Warty panicgrass.....	<i>Panicum verrucosum</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Switchgrass	<i>Panicum virgatum</i>	
Bahiagrass	<i>Paspalum notatum</i>	
Jointgrass	<i>Paspalum paspalodes</i>	
Thin paspalum.....	<i>Paspalum setaceum</i>	
Vaseygrass.....	<i>Paspalum uroillei</i>	
Needlegrass.....	<i>Piptochaetium avenaceum</i>	
Annual bluegrass	<i>Poa annua</i>	
Autumn bluegrass.....	<i>Poa autumnalis</i>	
Pickernelweed.....	<i>Pontederia cordata</i>	
Shadow-witch.....	<i>Ponthieva racemosa</i>	
Needle palm.....	<i>Rhapidophyllum hystrix</i>	33
Horn-rush.....	<i>Rhynchospora corniculata</i>	
Beak-rush.....	<i>Rhynchospora globularis</i>	
Rhynchospora.....	<i>Rhynchospora grayii</i>	
Rhynchospora.....	<i>Rhynchospora miliacea</i>	
Dwarf palmetto	<i>Sabal minor</i>	
Duck potato.....	<i>Sagittaria latifolia</i>	
Schizachyrium	<i>Schizachyrium sanguineum</i>	
Southern bluestem	<i>Schizachyrium stoloniferum</i>	
Scirpus	<i>Scirpus divaricatus</i>	
Bulrush.....	<i>Scirpus lineatus</i>	
Nut-rush	<i>Scleria ciliata</i>	
Nut-rush	<i>Scleria oligantha</i>	
Saw palmetto	<i>Serenoa repens</i>	
Nodding indian-grass	<i>Shorghastrum elliottii</i>	
Blue-eyed grass.....	<i>Sisyrinchium nashii</i>	
False solomon's seal.....	<i>Smilacina racemosa</i>	
Catbrier	<i>Smilax auriculata</i>	
Catbrier	<i>Smilax bona-nox</i>	
Smilax.....	<i>Smilax ecirrhata</i>	
Wild sarsaparilla	<i>Smilax glauca</i>	
Carrion-flower	<i>Smilax lasioneuron</i>	
Smilax.....	<i>Smilax rotundifolia</i>	
Jackson-vine	<i>Smilax smallii</i>	
China-root	<i>Smilax tamnoides</i>	
Coral greenbrier	<i>Smilax walteri</i>	
Prairie wedgescale	<i>Sphenopholis obtusata</i>	
Lace-lip ladies' tresses	<i>Spiranthes laciniata</i>	
Grass-leaved ladies tresses	<i>Spiranthes praecox</i>	
Spring ladies' tresses	<i>Spiranthes vernalis</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Sporobolus	<i>Sporobolus indicus</i>	
Pineland dropseed	<i>Sporobolus junceus</i>	
Spanish-moss	<i>Tillandsia usneoides</i>	
Crane-fly orchid	<i>Tipularia discolor</i>	2,33
Wandering jew*	<i>Tradescantia fluminensis</i>	
Tall redtop	<i>Tridens flavus</i>	
Lanceleaf wakerobin.....	<i>Trillium lancifolium</i>	2,19
Little sweet betsy.....	<i>Trillium underwoodii</i>	
Purple sandgrass	<i>Triplasis purpurea</i>	
Sessile-leaved bellwort.....	<i>Uvularia sessilifolia</i>	
False hellebore	<i>Veratrum woodii</i>	2
Common six week fescue.....	<i>Vulpia octoflora</i>	
Beargrass	<i>Yucca flaccida</i>	
Rain-lily	<i>Zephyranthes atamasco</i>	
Giant cutgrass	<i>Zizaniopsis miliacea</i>	

Angiosperms - Dicots

Three-seeded mercury.....	<i>Acalypha gracilens</i>	
Acalypha.....	<i>Acalypha rhomboidea</i>	
Sheep-bur	<i>Acanthospermum australe</i>	
Box-elder	<i>Acer negundo</i>	
Red maple	<i>Acer rubrum</i>	
Chalk Maple.....	<i>Acer saccharum</i>	
Silver Maple	<i>Acer saccharinum</i>	
Acmella.....	<i>Acmella repens</i>	
White baneberry	<i>Actaea pachypoda</i>	
Red buckeye.....	<i>Aesculus pavia</i>	
Gerardia.....	<i>Agalinis divaricata</i>	
Gerardia.....	<i>Agalinis fasciculata</i>	
Agalinis.....	<i>Agalinis tenuifolia</i>	
White snakeroot	<i>Ageratina altissima</i>	
Wild hoarhound	<i>Ageratina aromatica</i>	
Incised groove bur	<i>Agrimonia incise</i>	14,23
Harvest-lice	<i>Agrimonia microcarpa</i>	
Hazel alder	<i>Alnus serrulata</i>	
Common ragweed	<i>Ambrosia artemisiifolia</i>	
False-indigo.....	<i>Amorpha fruticosa</i>	
Pepper-vine.....	<i>Ampelopsis arborea</i>	
Raccoon-grape	<i>Ampelopsis cordata</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Hog-peanut	<i>Amphicarpa bracteata</i>	
Blue dogbane	<i>Amsonia ciliata</i>	
Blue star	<i>Amsonia rigida</i>	
Angelica	<i>Angelica dentata</i>	
Ground-nut	<i>Apios americana</i>	
Marianna columbine.....	<i>Aquilegia canadensis</i>	2
Arenaria.....	<i>Arenaria lanuginosa</i>	
Thyme-leaved sandwort	<i>Arenaria sephyllifolia</i>	
Snakeroot.....	<i>Aristolochia serpentaria</i>	
Dutchman's pipe	<i>Aristolochia tomentosa</i>	
Devil's walkingstick.....	<i>Arlaia spinosa</i>	
Milkweed.....	<i>Asclepias cinerea</i>	
Milkweed.....	<i>Asclepias michauxii</i>	
Milkweed.....	<i>Asclepias perennis</i>	
Butterfly-weed.....	<i>Asclepias tuberosa</i>	
Milkweed.....	<i>Asclepias variegata</i>	
Papaw	<i>Asimina longifolia</i>	
Papaw	<i>Asimina parviflora</i>	
Papaw	<i>Asimina triloba</i>	
Aster	<i>Aster adnatus</i>	
Southern silky aster	<i>Aster concolor</i>	
Aster	<i>Aster dumosus</i>	
Apalachicola river aster	<i>Aster fragilis var.brachypholis</i>	21
Aster	<i>Aster lateriflorus</i>	
Yellow foxglove.....	<i>Aureolaria flava</i>	
White wild-indigo.....	<i>Baptisia alba</i>	
Apalachicola wild indigo.....	<i>Baptisia megacarpa</i>	2,33
Rattan-vine.....	<i>Berchemia scandens</i>	
Green-eyes.....	<i>Berlandiera pumila</i>	
River birch.....	<i>Betula nigra</i>	
Spanish needles	<i>Bidens bipinnata</i>	
Beggar-ticks.....	<i>Bidens discoidea</i>	
False nettle.....	<i>Boehmeria cylindrica</i>	
Britonia	<i>Britonia discoidea</i>	
Ladies' eardrop.....	<i>Brunnichia ovata</i>	
Gum bumelia	<i>Bumelia lanuginosa</i>	
Buckthorn bumelia.....	<i>Bumelia lycioides</i>	
Toothed savery	<i>Calamintha dentata</i>	14,23
Beauty-berry	<i>Callicarpa americana</i>	
Sweet-shrub	<i>Calycanthus floridus</i>	2,14

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Cup-seed.....	<i>Calyocarpum lyonii</i>	
Tall bellflower	<i>Campanula americana</i>	
Trumpet vine	<i>Campsis radicans</i>	
Stiff cornel	<i>Cardamine bulbosa</i>	
Deer's tongue	<i>Carphephorus odoratissimus</i>	
Blue-beech	<i>Carpinus caroliniana</i>	
Water hickory	<i>Carya aquatica</i>	
Bitternut hickory	<i>Carya cordiformis</i>	
Pignut hickory	<i>Carya glabra</i>	
Mockernut hickory	<i>Carya tomentosa</i>	
Catalpa.....	<i>Catalpa bignonioides</i>	
New Jersey tea	<i>Ceanothus americanus</i>	
Sugarberry.....	<i>Celtis laevigata</i>	
Georgia hackberry	<i>Celtis treuifolia</i>	
Butterfly-pea	<i>Centrosema virginianum</i>	
Buttonbush.....	<i>Cephalanthus occidentalis</i>	
Mouse-ear chickweed.....	<i>Cerastium glomeratum</i>	
Redbud	<i>Cersis canadensis</i>	
Wild chervil.....	<i>Chaerophyllum</i>	
Partridge-pea	<i>Chamaecrista nictitans</i>	
Chamaesyce	<i>Chamaesyce humistrata</i>	
Eyebane	<i>Chamaesyce hyssopifolia</i>	
Milk purslane.....	<i>Chamaesyce maculata</i>	
Old Man's Beard	<i>Chionanthus virginicus</i>	
Golden-aster.....	<i>Chrysopsis lanuginosa</i>	
Golden-aster.....	<i>Chrysopsis mariana</i>	
Virgin's bower	<i>Clematis catesbyana</i>	
Leather-flower	<i>Clematis crispa</i>	
Clematis	<i>Clematis terniflora</i>	
Sweet pepperbush.....	<i>Clethra alnifolia</i>	
Butterfly-pea	<i>Clitoria mariana</i>	
Tread-softly	<i>Cnidoscolus stimulosus</i>	
Carolina coralbead	<i>Cocculus carolinus</i>	
Horse-balm.....	<i>Collinsonia serotina</i>	
Mist-flower.....	<i>Conoclinium coelestinum</i>	
Squaw root	<i>Conopholis americana</i>	
Apalachicola rosemary.....	<i>Conradina glabra</i>	14
Horse-weed	<i>Conyza canadensis</i>	
Shrubby cornel.....	<i>Cornus asperifolia</i>	
Flowering dogwood	<i>Cornus foemina</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Apple haw	<i>Crataegus aestivalis</i>	
Summer haw	<i>Crataegus flava</i>	
Parsley haw	<i>Crataegus marshallii</i>	
Crataegus.....	<i>Crataegus pulcherrima</i>	
Red haw	<i>Crataegus spathulata</i>	
Dwarf haw.....	<i>Crataegus uniflora</i>	
Green haw	<i>Crataegus viridis</i>	
Scratch daisy	<i>Croptilon divaricatum</i>	
Rabbit-bells.....	<i>Crotalaria rotundifolia</i>	
Silver croton.....	<i>Croton argyranthemus</i>	
Canada honewort.....	<i>Cryptotaenia canadensis</i>	19
Wild comphrey	<i>Cynoglossum virginianum</i>	19
Cow-itch vine.....	<i>Decumaria barbara</i>	
Spring cress	<i>Dentaria laciniata</i>	
Beggar-lice.....	<i>Desmodium</i>	
Desmodium.....	<i>Desmodium ciliare</i>	
Desmodium.....	<i>Desmodium glutinosum</i>	
Desmodium.....	<i>Desmodium laevigatum</i>	
Desmodium.....	<i>Desmodium marilandicum</i>	
Desmodium.....	<i>Desmodium nudiflorum</i>	
Desmodium.....	<i>Desmodium paniculatum</i>	
Desmodium.....	<i>Desmodium rotundifolium</i>	
Desmodium.....	<i>Desmodium strictum</i>	
Desmodium.....	<i>Desmodium tortuosum</i>	
Dicerandra.....	<i>Dicerandra linearifolia</i>	
Dichondra.....	<i>Dichondra carolinensis</i>	
Dicliptera	<i>Dicliptera brachiata</i>	
Dicliptera	<i>Dicliptera halei</i>	
Poor-joe.....	<i>Diodia teres</i>	
Button-weed.....	<i>Diodia virginiana</i>	
Persimmon	<i>Diospyros virginiana</i>	
Eastern leatherwood.....	<i>Dirca palustris</i>	19
Dentaria	<i>Draba brachycarpa</i>	
Eclipta	<i>Eclipta prostrata</i>	
Elephant's foot.....	<i>Elephantopus carolinianus</i>	
Elephant's foot.....	<i>Elephantopus elatus</i>	
Elephant's foot.....	<i>Elephantopus tomentosus</i>	
Scalystem.....	<i>Elytraria carolinensis</i>	
Beech-drops.....	<i>Eptifagus virginiana</i>	
Trailing arbutus.....	<i>Epigaea repens</i>	21

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Daisy fleabane.....	<i>Erigeron strigosus</i>	
Dog-tongue	<i>Eriogonum tomentosum</i>	
Strawberry bush.....	<i>Euonymus americanus</i>	
Burningbush	<i>Euonymus atropurpureus</i>	2
Dogfennel.....	<i>Eupatorium caillifolium</i>	
Dogfennel.....	<i>Eupatorium compositifolium</i>	
Eupatorium.....	<i>Eupatorium linearifolium</i>	
Eupatorium.....	<i>Eupatorium semiserratum</i>	
Eupatorium.....	<i>Eupatorium serotinum</i>	
Wood spurge	<i>Euphorbia commutata</i>	2
Spurge.....	<i>Euphorbia exserta</i>	
Euphorbia.....	<i>Euphorbia floridana</i>	
Flat-topped goldenrod	<i>Euthamia minor</i>	
Euphorbia.....	<i>Euphorbia pubentissima</i>	
Fleischmannia.....	<i>Fleischmannia incarnata</i>	
Annual trampweed.....	<i>Facelis retusa</i>	
American beech.....	<i>Fagus grandifolia</i>	
Pink throughwort.....	<i>Fleischmannia incarnata</i>	
Swamp-privet	<i>Forestiera acuminata</i>	
Godfrey's swamp privet	<i>Forestiera godfreyi</i>	33
Forestiera.....	<i>Forestiera ligustrina</i>	
White ash.....	<i>Fraxinus americana</i>	
Water ash.....	<i>Fraxinus caroliniana</i>	
Green ash.....	<i>Fraxinus pennsylvanica</i>	
Pumpkin ash	<i>Fraxinus profunda</i>	
Milk-pea.....	<i>Galactia mohlenbrockii</i>	
Mild-pea	<i>Galactia microphylla</i>	
Milk-pea.....	<i>Galactia volubilis</i>	
Goosegrass	<i>Galium aparine</i>	
Wild-licorice.....	<i>Galium aparine</i>	
Ladies' hairy bedstraw	<i>Galium pilosum</i>	
Evening primrose.....	<i>Gaura angustifolia</i>	
Evening primrose.....	<i>Gaura filipes</i>	
Dwarf huckleberry	<i>Gaylussacia dumosa</i>	
Carolina yellow-jessamine.....	<i>Gelsemium serpervirens</i>	
Catesby's gentian	<i>Gentiana catesbaei</i>	
Sampson's snakeroot	<i>Gentiana villosa</i>	
Soapwort gentian	<i>Gentiana saponaria</i>	
Carolina cranesbill	<i>Geranium carolinianum</i>	
Moss verbena.....	<i>Glandularia pulchella</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Water-locust.....	<i>Gleditsia aquatica</i>	
Honey-locust.....	<i>Gleditsia triacanthos</i>	
Rabbit-tobacco	<i>Gnaphalium obtusifolium</i>	
Cudweed	<i>Gnaphalium pensylvanicum</i>	
Cudweed	<i>Gnaphalium purpureum</i>	
Downy rattlesnake plantain	<i>Goodyera pubescens</i>	19
Hedge-hyssop.....	<i>Gratioa virginiana</i>	
Little silverbell.....	<i>Halesia carolina</i>	
Two-winged silverbell.....	<i>Halesia diptera</i>	
Witch-hazel	<i>Hamamelis virginiana</i>	
Sneezeweed.....	<i>Helenium autumnale</i>	
Liverleaf.....	<i>Hepatica nobilis</i>	2
Hedyotis	<i>Hedyotis corymbosa</i>	
Innocence.....	<i>Hedyotis procumbens</i>	
Rock-rose.....	<i>Helianthemum carolinianum</i>	
Turnsole.....	<i>Heliotropium indicum</i>	
Heartleaf.....	<i>Hexastylis arifolia</i>	2,19
Halberd-leaved marshmallow	<i>Hibiscus militaris</i>	
Hawkweed	<i>Hieracium gronovii</i>	
Wild hydrangea.....	<i>Hydrangea arborescens</i>	2,19
Oak-leaved hydrangea	<i>Hydrangea quercifolia</i>	
Pennywort.....	<i>Hydrocotyle verticillata</i>	
Hypericum	<i>Hypericum apocynifolium</i>	
St. Andrew's cross.....	<i>Hypericum crux-andreae</i>	
Dwarf St. John's-wort	<i>Hypericum mutilum</i>	
Musky mint.....	<i>Hyptis mutabilis</i>	
Carolina holly	<i>Ilex ambigua</i>	
Possumhaw	<i>Ilex decidua</i>	
Gallberry.....	<i>Ilex glabra</i>	
American holly	<i>Ilex opaca</i>	
Yaupon.....	<i>Ilex vomitoria</i>	
Jewel-weed	<i>Impatiens capensis</i>	
Wild-indigo.....	<i>Indigofera caroliniana</i>	
Wild potato vine.....	<i>Ipomoea pandurata</i>	
Bloodleaf.....	<i>Iresine diffusa</i>	
Virginia-willow	<i>Itea virginica</i>	
Morning glory	<i>Jacquemontia tamnifolia</i>	
Black walnut	<i>Juglans nigra</i>	
Justicia.....	<i>Justicia ovata</i>	
Mountian laurel.....	<i>Kalmia latifolia</i>	19

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Dwarf dandelion	<i>Krigia cespitosa</i>	
Dwarf dandelion	<i>Krigia virginica</i>	
False boneset	<i>Kuhnia eupatorioides</i>	
Japanese clover	<i>Kummerowia striata</i>	
Wild lettuce	<i>Lactuca canadensis</i>	
Wild lettuce	<i>Lactuca floridana</i>	
Blue lettuce.....	<i>Lactuca graminifolia</i>	
Lantana	<i>Lantana camara</i>	
Wood nettle.....	<i>Laportea canadensis</i>	
Pinweed	<i>Lechea minor</i>	
Pinweed	<i>Lechea mucronata</i>	
Pinweed	<i>Lechea sessiliflora</i>	
Lion's ear	<i>Leonotis nepetaefolia</i>	
Whitlow-grass.....	<i>Lepidium virginicum</i>	
Sericea	<i>Lespedeza cuneata</i>	
Lespedeza.....	<i>Lespedeza intermedia</i>	
Trailing lespedeza	<i>Lespedeza procumbens</i>	
Lespedeza.....	<i>Lespedeza stuevei</i>	
Virginia bush-clover	<i>Lespedeza virginica</i>	
Dog-hobble.....	<i>Leucothoe axillaris</i>	
Blazing star.....	<i>Liatris chapmanii</i>	
Gholson's blazing star	<i>Liatris holsoni</i>	14
Blazing star.....	<i>Liatris gracilis</i>	
Blazing star.....	<i>Liatris tenuifolia</i>	
Gopher-apple.....	<i>Licania michauxii</i>	
Chinese privet*	<i>Ligustrum sinense</i>	
Toad-flax.....	<i>Linaria candensis</i>	
Spicebush.....	<i>Lindera benzoin</i>	
False pimpernel	<i>Lindernia dubia</i>	
Sweetgum.....	<i>Liquidambar styraciflua</i>	
Tulip tree	<i>Liriodendron tulipifera</i>	
Borage	<i>Lithospermum tuberosum</i>	
Cardinal-flower	<i>Lobelia cardinalis</i>	
Japanese honeysuckle*	<i>Lonicera japonica</i>	
Coral honeysuckle.....	<i>Lonicera sempervirens</i>	
Primrose-willow	<i>Ludwigia decurrens</i>	
Cylindrical-fruited ludwigia	<i>Ludwigia glandulosa</i>	
Ludwigia	<i>Ludwigia leptocarpa</i>	
Marsh-purslane	<i>Ludwigia palustris</i>	
Bugleweed.....	<i>Lycopus rubellus</i>	

* Non-native Species

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Water hoarhound.....	<i>Lycopus virginicus</i>	
Rose-rush.....	<i>Lygodesmia aphylla</i>	
Fringed loosestrife	<i>Lysimachia ciliata</i>	
Lance-leaved loosestrife.....	<i>Lysimachia lanceolata</i>	
Curtiss' loosestrife.....	<i>Lythrum curtissi</i>	33
Ashe's magnolia	<i>Magnolia ashei</i>	19
Southern magnolia.....	<i>Magnolia grandiflora</i>	
Pyramid magnolia.....	<i>Magnolia pyramidata</i>	19
Sweetbay.....	<i>Magnolia virginiana</i>	
Crabapple	<i>Malus angustifoli</i>	
Alabama milkvine.....	<i>Matelea alabamensis</i>	14
Florida spiny-pod.....	<i>Matelea floridana</i>	2
Angle-pod	<i>Matelea gonocarpos</i>	
Mazus.....	<i>Mazus pumilus</i>	
Mecardonia	<i>Mecardonia acuminata</i>	
Spotted medic	<i>Medicago arabica</i>	
Melanthra	<i>Melanthra nivea</i>	
Chinaberry*	<i>Melia azedarach</i>	
Creeping-cucumber	<i>Melothria pendula</i>	
Moonseed	<i>Menispermum canadense</i>	
Micranthemum	<i>Micranthemum umbrosum</i>	
Climbing hempweed	<i>Mikania cordifolia</i>	
Climbing hempweed	<i>Mikania scandens</i>	
Monkey-flower	<i>Mimulus alatus</i>	
Partridge-berry	<i>Mitchella repens</i>	
Miterwort	<i>Mitreola petiolata</i>	
Carpetweed.....	<i>Mollugo verticillata</i>	
Horsemint	<i>Monoarda punctata</i>	
Indian pipe	<i>Monotropa uniflora</i>	
Red mulberry	<i>Morus rubra</i>	
Forget-me-not	<i>Myosotis macrosperma</i>	
Wax-myrtle	<i>Myrica cerifera</i>	
Bayberry	<i>Myrica heterophylla</i>	
Nemophila.....	<i>Nemophila aphylla</i>	
Water tupelo	<i>Nyssa aquatica</i>	
Blackgum.....	<i>Nyssa biflora</i>	
Sourgum	<i>Nyssa sylvatica</i>	
Evening primrose.....	<i>Oenothera biennis</i>	
Wild-olive.....	<i>Osmanthus americanus</i>	
Hop-hornbean	<i>Ostrya virginiana</i>	

* Non-native Species

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Wood-sorrel	<i>Oxalis dillenii</i>	
Wood-sorrel	<i>Oxalis priceae</i>	
Sourwood	<i>Oxydendrum arboretum</i>	
Allegheny spurge.....	<i>Pachysandra procumbens</i>	2,19
Coastal plain palaflox.....	<i>Palafoxia intergrifolia</i>	
Whitlow-wort	<i>Paronychia baldwinnii</i>	
Paronychia.....	<i>Paronychia patula</i>	
Virginia creeper, woodbine	<i>Parthenocissus quinquefolia</i>	
Apricat-vine	<i>Passiflora incarnata</i>	
Yellow passion-flower.....	<i>Passiflora lutea</i>	
Ditch stonecrop	<i>Penthorum sedoides</i>	
Beefsteak-plant	<i>Perilla frutescens</i>	
Upland redbay.....	<i>Persea borbonia</i>	
Swamp redbay.....	<i>Persea palustris</i>	
Wild-bean.....	<i>Phaseolus polystachios</i>	
Mock-orange.....	<i>Philadelphus indorus</i>	
Thick-leaf phlox.....	<i>Phlox carolina</i>	
Blue phlox	<i>Phlox divaricata</i>	
Mistletoe	<i>Phoradendron serotinum</i>	
Lop-seed	<i>Phryma leptostachya</i>	
Leaf-flower.....	<i>Phyllanthus caroliniensis</i>	
Ground-cherry.....	<i>Physalis angulata</i>	
Physalis.....	<i>Physalis carpenteri</i>	
Physalis.....	<i>Physalis pubescens</i>	
Pokeberry	<i>Phytolacca americana</i>	
Clear-weed	<i>Pilea pumila</i>	
Gopher-grass.....	<i>Pityopsis aspera</i>	
Pityopsis	<i>Pityopsis camphorata</i>	
Planer-tree	<i>Planera aquatica</i>	
Hoary plantain	<i>Plantago virginica</i>	
Sycamore	<i>Platanus occidentalis</i>	
Wild bachelor's button.....	<i>Ploygala nana</i>	
Camphor-weed.....	<i>Pluchea camphorata</i>	
Procession-flower.....	<i>Polygala incarnata</i>	
Polygala	<i>Polygala polygama</i>	
Slender jointweed.....	<i>Polygonella gracilis</i>	
Pale smartweed	<i>Polygonum pensylvanicum</i>	
Dotted smartweed.....	<i>Polygonum punctatum</i>	
Climbing false buckwheat	<i>Polygonum scandens</i>	
Bear's foot.....	<i>Polymnia uvedalia</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Polypremum	<i>Polypremum procumbens</i>	
Eastern cottonwood	<i>Populus deltoides</i>	
Swamp cottonwood	<i>Populus heterophylla</i>	
Lion's foot.....	<i>Prenanthes serpentina</i>	
Alabama cherry	<i>Prunus alabamensis</i>	
Carolina laurel-cherry	<i>Prunus caroliniana</i>	
Black cherry	<i>Prunus serotina</i>	
Hog plum	<i>Prunus umbellata</i>	
Wafer-ash	<i>Ptelea trifoliata</i>	
Florida mountain mint	<i>Pycnanthemum floridanum</i>	
False dandelion.....	<i>Pyrrhopappus carolinianus</i>	
White oak	<i>Quercus alba</i>	
Spanish oak	<i>Quercus falcata</i>	
Sand-live oak	<i>Quercus geminata</i>	
Upland laurel oak	<i>Quercus hemisphaerica</i>	
Blue-jack oak.....	<i>Quercus incana</i>	
Turkey oak	<i>Quercus laevis</i>	
Swamp laurel oak.....	<i>Quercus laurifolia</i>	
Overcup oak.....	<i>Quercus lyrata</i>	
Sand-post oak	<i>Quercus margaretta</i>	
Swamp chestnut oak.....	<i>Quercus michauxii</i>	
Chinquapin oak.....	<i>Quercus muehlenbergii</i>	
Water oak	<i>Quercus nigra</i>	
Shumard oak.....	<i>Quercus shumardii</i>	
Post oak	<i>Quercus stellata</i>	
Black oak	<i>Quercus velutina</i>	
Live oak	<i>Quercus virginiana</i>	
Kidney-leaf buttercup	<i>Ranunculus abortivus</i>	
Blisterwort.....	<i>Ranunculus recurvatus</i>	
Meadow beauty.....	<i>Rhexia alifanus</i>	
Florida flame azalea.....	<i>Rhododendron austrinum</i>	19
Pink Azalea	<i>Rhododendron canescens</i>	
Shining Sumac	<i>Rhus copallina</i>	
Pine barren pea.....	<i>Rhynchosia cytisoides</i>	
Dollar-weed	<i>Rhynchosia reniformis</i>	
Richardia	<i>Richardia brasiliensis</i>	
Marsh-cress	<i>Rorippa palustris</i>	
Yellow-cress	<i>Rorippa sessiliflora</i>	
Swamp rose.....	<i>Rosa palustris</i>	
Toothcup	<i>Rotala ramosior</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Southern highbush blackberry	<i>Rubus betulifolius</i>	
Sand blackberry	<i>Rubus cuneifolius</i>	
Dewberry	<i>Rubus flagellaris</i>	
Common dew berry	<i>Rubus trivialis</i>	
Golden-glow	<i>Rudbeckia laciniata</i>	
Wild petunia	<i>Ruellia carolinensis</i>	
Southern sourdock	<i>Rumex hastatulus</i>	
Swamp-pink	<i>Sabatia calycina</i>	
Pearl-wort	<i>Sagina decumbens</i>	
Black willow	<i>Salix nigra</i>	
Lyre-leaved sage	<i>Salvia lyrata</i>	
Elderberry	<i>Sambucus canadensis</i>	
Water-pimpernel	<i>Samolus parviflorus</i>	
Bloodroot	<i>Sanguinaria canadensis</i>	
Black snakeroot	<i>Sanicula canadensis</i>	
Black snakeroot	<i>Sanicula marilandica</i>	
Black snakeroot	<i>Sanicula smallii</i>	
Chinese tallow*	<i>Sapium sebiferum</i>	
Sassafras	<i>Sassafras albidum</i>	
Lizard's tail	<i>Saururus cernuus</i>	
Bay star-vine	<i>Schisandra glabra</i>	2
Sensitive-briar	<i>Schrankia microphylla</i>	
Sweet-broom	<i>Scoparia dulcis</i>	
Scutellaria	<i>Scutellaria incana</i>	
Sebastian-bush	<i>Sebastiania fruticosa</i>	
Golden ragwort	<i>Senecio glabellus</i>	
White-topped aster	<i>Sericocarpus tortifolius</i>	
Black senna	<i>Seymeria cassioides</i>	
Seymeria	<i>Seymeria pectinata</i>	
Indian hemp	<i>Sida rhombifolia</i>	
Buckthorn bumelia	<i>Sideroxylon lycoides</i>	2, 33
Sleepy catchfly	<i>Silene antirrhina</i>	
Rosin-weed	<i>Silphium compositum</i>	
Rosin-weed	<i>Silphium simpsonii</i>	
Nightshade	<i>Solanum americanum</i>	
Horse-nettle	<i>Solanum carolinense</i>	
Solanum	<i>Solanum carolinense var. floridanum</i>	
Common goldenrod	<i>Solidago altissima</i>	
Goldenrod	<i>Solidago brachyphylla</i>	
Bluestem goldenrod	<i>Solidago caesia</i>	

* Non-native Species

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Goldenrod	<i>Solidago flaccidifolia</i>	
Sweet-scented goldenrod.....	<i>Solidago odora</i>	
Goldenrod	<i>Solidago tarda</i>	
Woodland false buttonweed	<i>Spermacoce assurgens</i>	
Spermacoce	<i>Spermacoce glabra</i>	
Spermolepis	<i>Spermolepis divaricata</i>	
Indian Pink.....	<i>Spigelia marilandica</i>	
Bladdernut	<i>Staphylea trifolia</i>	2, 33
Common chickweed	<i>Stellaria media</i>	
Silky camellia	<i>Stewartia malacodendro</i>	2,19
Stipulicida	<i>Stipulicida setacea</i>	
Morning glory	<i>Stylisma patens</i>	
Carolina false vervain.....	<i>Stylodon carneum</i>	
Pencil-flower	<i>Stylosanthes biflora</i>	
Bigleaf snowbell	<i>Styrax grandifolia</i>	
Sweetleaf.....	<i>Symplocos tinctoria</i>	
Prostrate goat's rue	<i>Tephrosia chrysophylla</i>	
Devil's shoestring.....	<i>Tephrosia virginiana</i>	
Rue-anemone	<i>Thalictrum thalictroides</i>	33
Basswood	<i>Tilia americana</i>	
Jumpseed	<i>Tovara virginiana</i>	
Poison-ivy.....	<i>Toxicodendron radicans</i>	
Poison-oak.....	<i>Toxicodendron toxicarium</i>	
Poison-sumac	<i>Toxicodendron vernix</i>	
Triadenum	<i>Tradenum walteri</i>	
Trepocarpus	<i>Trepocarpus aethusae</i>	
Marsh St. John's-wort.....	<i>Triadenum tubulosum</i>	
Bastard pennyroyal.....	<i>Trichostema dichotomum</i>	
Low hop-clover	<i>Trifolium campestre</i>	
Carolina clover	<i>Trifolium carolinianum</i>	
Venus' looking glass	<i>Triodanis biflora</i>	
Venus' looking glass	<i>Triodanis perfoliata</i>	
Winged elm.....	<i>Ulmus alata</i>	
American elm.....	<i>Ulmus americana</i>	
Sparkleberry.....	<i>Vaccinium arboreum</i>	
Vaccinium.....	<i>Vaccinium darrowii</i>	
Elliott's blueberry.....	<i>Vaccinium elliotii</i>	
Shiny blueberry	<i>Vaccinium myrsinites</i>	
Deerberry	<i>Vaccinium stamineum</i>	
Tick-seed	<i>Verbesina virginica</i>	

Torreya State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Narrow-leaved ironwede.....	<i>Vernonia angustifolia</i>	
Giant ironweed.....	<i>Vernonia gigantea</i>	
Corn speedwell.....	<i>Veronica arvensis</i>	
Maple-leaved viburnum	<i>Viburnum acerifolium</i>	
Southern arrow-wood	<i>Viburnum dentatum</i>	
Small viburnum.....	<i>Viburnum obovatum</i>	
Southern black-haw	<i>Viburnum rufidulum</i>	
Common vetch	<i>Vicia angustifolia</i>	
Lentil-tare	<i>Vicia tetrasperma</i>	
Violet.....	<i>Viola affinis</i>	
Violet.....	<i>Viola esculenta</i>	
Halberd-leaved yellow viole	<i>Viola hastate</i>	2
Violet.....	<i>Viola hirsutula</i>	
Violet.....	<i>Viola primulifolia</i>	
Violet.....	<i>Viola septemloba</i>	
Violet.....	<i>Viola sororia</i>	
Violet.....	<i>Viola triloba</i>	
Violet.....	<i>Viola villosa</i>	
Violet.....	<i>Viola walteri</i>	
Summer grape	<i>Vitis aestivalis</i>	
Simpson's grape	<i>Vitis cinerea</i> var. <i>floridana</i>	
Muscadine	<i>Vitis rotundifolia</i>	
Frost grape	<i>Vitis vulpina</i>	
Bellflower	<i>Wahlenbergia marginata</i>	
Cocklebur	<i>Xanthium strumarium</i>	
Youngia.....	<i>Youngia japonica</i>	

Torrey State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
-------------	-----------------	--------------------------------------

INVERTEBRATES

Triangle floater.....	<i>Alasmidonta undulate</i>	54
Fat threeridge	<i>Amblema neislerii</i>	54
Fire-back crayfish	<i>Cambarus pyronotus</i>	19
Say's spiketail.....	<i>Cordulegaster sayi</i>	19
Torrey trap-door spider	<i>Cyclocosmia torreyi</i>	19
Round pearlshell.....	<i>Glebula rotundata</i>	54
Washboard.....	<i>Megaloniaias nervosa</i>	54
Golden silk spider	<i>Nephilia clavipes</i>	21
Scarab beetle	<i>Phanaeus tringularis</i>	54

FISH

Shadow bass	<i>Ambloplites ariommus</i>	54
Bowfin	<i>Amia calva</i>	54
Florida sand darter	<i>Ammocrypta bifascia</i>	54
Pirate perch.....	<i>Aphredoderus sayanus</i>	54
Quillback.....	<i>Carpiodes cyprinus</i>	54
Flier	<i>Centrarchus macropterus</i>	54
Fat sleeper	<i>Dormitator maculatus</i>	54
Gizzard shad	<i>Dorosoma cepedianum</i>	54
Threadfin shad	<i>Dorosoma petenense</i>	54
Everglades pygmy sunfish	<i>Elassoma evergladei</i>	54
Okefenokee pygmy sunfish.....	<i>Elassoma okefenokee</i>	54
Banded pygmy sunfish.....	<i>Elassoma zonatum</i>	54
Bluespotted sunfish.....	<i>Enneacanthus gloriosus</i>	54
Banded sunfish.....	<i>Enneacanthus obesus</i>	54
Silverjaw minnow.....	<i>Ericymba buccata</i>	54
Creek chubsucker	<i>Erimyzon oblongus</i>	54
Lake chubsucker	<i>Erimyzon sucetta</i>	54
Redfin pickerel	<i>Esox americanus americanus</i>	54
Chain pickerel	<i>Esox niger</i>	54
Brown darter	<i>Etheostoma edwini</i>	54
Swamp darter.....	<i>Etheostoma fusiforme</i>	54
Goldstripe darter	<i>Etheostoma parvipinne</i>	54
Gulf darter	<i>Etheostoma swaini</i>	54
Banded darter.....	<i>Etheostoma zonale</i>	54
Golden topminnow	<i>Fundulus chrysotus</i>	54
Banded topminnow	<i>Fundulus cingulatus</i>	54
Starhead topminnow	<i>Fundulus notti</i>	54

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Blackspotted topminnow	<i>Fundulus olivaceus</i>	54
Mosquitofish.....	<i>Gambusia affinis</i>	54
Least killifish	<i>Heterandria formosa</i>	54
Clear chub.....	<i>Hybopsis amblops</i>	54
Southern brook lamprey	<i>Ichthyomyzon gagei</i>	54
Snail bullhead.....	<i>Ictalurus brunneus</i>	54
White catfish.....	<i>Ictalurus catus</i>	54
Yellow bullhead.....	<i>Ictalurus natalis</i>	54
Brown bullhead	<i>Ictalurus nebulosus</i>	54
Channel catfish.....	<i>Ictalurus punctatus</i>	54
Spotted bullhead.....	<i>Ictalurus serracanthus</i>	54
Longnose gar	<i>Lepisosteus osseus</i>	54
Brook silverside	<i>Labidesthes sicculus</i>	54
Spotted gar.....	<i>Lepisosteus oculatus</i>	54
Florida gar.....	<i>Lepisosteus platyrhincus</i>	54
Redbreast sunfish	<i>Lepomis auritus</i>	54
Green sunfish	<i>Lepomis cyanellus</i>	54
Warmouth.....	<i>Lepomis gulosus</i>	54
Orangespotted shunfish	<i>Lepomis humilis</i>	54
Bluegill.....	<i>Lepomis macrochirus</i>	54
Dollar sunfish.....	<i>Lepomis marginatus</i>	54
Redear sunfish.....	<i>Lepomis microlophus</i>	54
Spotted sunfish	<i>Lepomis punctatus</i>	54
Pygmy killifish	<i>Leptolucania ommata</i>	54
Bluefin killifish	<i>Lucania goodei</i>	54
Redeye bass	<i>Micropterus coosae</i>	54
Spotted bass.....	<i>Micropterus punctulatus</i>	54
Largemouth bass	<i>Micropterus salmoides</i>	54
Spotted sucker.....	<i>Minytrema melanops</i>	54
White bass.....	<i>Morone chrysops</i>	54
Sunshine bass	<i>Morone hybrid</i>	54
Gray redhorse	<i>Moxostoma congestum</i>	54
Golden shiner	<i>Notemingtonus crysoleucas</i>	54
Bluestripe shiner	<i>Notropis callitaenia</i>	54
Ironcolor shiner.....	<i>Notropis chalybaeus</i>	54
Dusky shiner	<i>Notropis cummingsae</i>	54
Pugnose minnow	<i>Notropis emiliae</i>	54
Redeye chub	<i>Notropis harperi</i>	54
Sailfin shiner	<i>Notropis hypselopterus</i>	54
Highscale shiner	<i>Notropis hysilepis</i>	54
Bannerfin shiner.....	<i>Notropis leedsii</i>	54

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Longnose shiner.....	<i>Notropis longirostris</i>	54
Taillight shiner	<i>Notropis maculatus</i>	54
Coastal shiner.....	<i>Notropis petersoni</i>	54
Flagfin shiner.....	<i>Notropis signipinnis</i>	54
Weed shiner.....	<i>Notropis texanus</i>	54
Blacktail shiner.....	<i>Notropis venustus</i>	54
Bluenose shiner.....	<i>Notropis welaka</i>	54
Bandfin shiner	<i>Notropis zonistius</i>	54
Black madtom	<i>Noturus funebris</i>	54
Tadpole madtom	<i>Noturus gyrinus</i>	54
Speckled madtom.....	<i>Noturus leptacanthus</i>	54
Blackbanded darter	<i>Percina nigrofasciata</i>	54
Sailfin molly	<i>Poecilia latipinna</i>	54
Black crappie	<i>Pomoxis nigromaculatus</i>	54
Flathead catfish.....	<i>Pylodictis olivaris</i>	54
Creek chub.....	<i>Semotilus atromaculatus</i>	54
Sauger	<i>Stizostedion canadense</i>	54

AMPHIBIANS

Alabama waterdog.....	<i>Necturus alabamensis</i>	35,54
Two-toed amphiuma	<i>Amphiuma means</i>	35, 54
One-toed amphiuma.....	<i>Amphiuma pholeter</i>	28,54
Greater siren.....	<i>Siren lacertina</i>	54
Eastern lesser siren.....	<i>Siren intermedia</i>	54
Slender dwarf siren.....	<i>Pseudobranchius striatus</i>	54
Apalachicola dusky salamander....	<i>Desmognathus apalachicola</i>	56
Mole salamander	<i>Ambystoma talpoideum</i>	19,28,54
Marbled salamander	<i>Ambystoma opacum</i>	19,28,54
Central newt.....	<i>Notophthalmus lousianensis</i>	19,28,54
Spotted dusky salamander	<i>Desmognathus fuscus</i>	19,28,54
Southern dusky salamander.....	<i>Desmognathus auriculatus</i>	19,28,54
Slimy salamander	<i>Plethodon glutinosus</i>	19,33
Four-toed salamander	<i>Hemidactylium scutatum</i>	19,28,54
Rusty mud salamander	<i>Pseudotriton montanus</i>	19,28,54
Southern red salamander.....	<i>Pseudotriton ruber</i>	19,28,54
Southern two-lined salamander	<i>Eurycea bislineata</i>	19,28,54
Three-lined salamander.....	<i>Eurycea longicauda</i>	19,28,54
Dwarf salamander.....	<i>Eurycea quadridigitata</i>	28,54
Eastern spadefoot	<i>Scaphiopus holbrookii</i>	19,28
Southern toad.....	<i>Bufo terrestris</i>	21,23

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Oak toad.....	<i>Bufo quercicus</i>	21,23
Florida cricket frog.....	<i>Acris gryllus</i>	19,28
Bird-voiced treefrog.....	<i>Hyla avivoca</i>	19,28
Gray treefrog.....	<i>Hyla chrysoscelis</i>	19,28
Southern spring peeper.....	<i>Hyla crucifer</i>	19,28
Green treefrog.....	<i>Hyla cinerea</i>	19,28,3
Barking treefrog.....	<i>Hyla gratiosa</i>	19,28
Squirrel treefrog.....	<i>Hyla squirella</i>	19,28
Little grass frog.....	<i>Limnaoedus ocularis</i>	28
Southern chorus frog.....	<i>Pseudacris nigrita</i>	19,28
Upland chorus frog.....	<i>Pseudacris triseriata</i>	19,21
Eastern narrowmouth toad	<i>Gastrophryne carolinensis</i>	28
Bullfrog.....	<i>Rana catesbeiana</i>	54
Pig frog.....	<i>Rana grylio</i>	54
River frog.....	<i>Rana heckscheri</i>	54
Bronze frog.....	<i>Rana clamitans</i>	28
Southern leopard frog.....	<i>Rana sphenoccephala</i>	54

REPTILES

Common snapping turtle.....	<i>Chelydra serpentina</i>	54,56
Suwannee cooter.....	<i>Pseudemys concinna</i>	54
Florida red-bellied turtle.....	<i>Chrysemys nelsoni</i>	54
Alligator snapping turtle.....	<i>Macroclmys temminckii</i>	54,56
Stinkpot.....	<i>Sternotherus odoratus</i>	54
Loggerhead musk turtle.....	<i>Sternotherus minor</i>	54
Eastern mud turtle.....	<i>Kinosternon subrudbrum</i>	54
Gulf coast box turtle.....	<i>Terrapene carolina</i>	21,28,
Barbour's map turtle.....	<i>Graptemys barbouri</i>	54
Yellowbelly slider.....	<i>Pseudemys scripta</i>	54
River cooter	<i>Pseudemys concinna</i>	54
Florida cooter	<i>Pseudemys floridana</i>	54
Chicken turtle.....	<i>Deirochelys reticularia</i>	54
Gopher tortoise.....	<i>Gopherus polyphemus</i>	14,21,23
Gulf coast spiny softshell	<i>Trionyx spiniferus</i>	54
Florida softshell	<i>Trionyx ferox</i>	54
Green anole.....	<i>Anolis carolinensis</i>	19,21,28,
Southern fence lizard.....	<i>Sceloporus undulatus</i>	23
Six-lined racerunner.....	<i>Cnemidophorus sexlineatus</i>	14,23
Ground skink	<i>Scincella lateralis</i>	19,28
Five-lined skink	<i>Eumeces fasciatus</i>	19,28

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Broad-headed skink	<i>Eumeces laticeps</i>	19,28
Southeastern five-lined skink.....	<i>Eumeces inexpectatus</i>	19,28
Eastern glass lizard.....	<i>Ophisaurus ventralis</i>	21,28
Slender glass lizard	<i>Ophisaurus a. attenuatus</i>	21,28
Brown water snake.....	<i>Nerodia taxispilota</i>	54
Red-bellied water snake	<i>Nerodia erythrogaster</i>	54
Banded water snake	<i>Nerodia fasciata</i>	54
North florida swamp snake.....	<i>Seminatrix pygaea</i>	54
Midland brown snake.....	<i>Storeria dekayi</i>	21
Florida red-bellied snake.....	<i>Storeria occipitomaculata</i>	21,28
Eastern garter snake.....	<i>Thamnophis sirtalis</i>	21,28
Eastern ribbon snake.....	<i>Thamnophis sauritus</i>	21,28
Eastern earth snake	<i>Virginia valeriae</i>	21,28
Rough earth snake.....	<i>Virginia striatula</i>	21,23
Eastern hognose snake	<i>Heterodon platyrhinos</i>	21,23
Southern hognose snake	<i>Heterodon simus</i>	21,23,28
Southern ringneck snake.....	<i>Diadphis punctatus</i>	19,21,28
Eastern mud snake	<i>Farancia abacura</i>	28,54
Rainbow snake.....	<i>Farancia erytrogramma</i>	35,54
Black racer.....	<i>Coluber constrictor</i>	14,21,28
Eastern coachwhip	<i>Masticophis flagellum</i>	14,23
Rough green snake	<i>Opheodrys aestivalis</i>	21
Corn snake	<i>Elaphe guttata</i>	19,54
Gray rat snake	<i>Elaphe obsoleta</i>	19,28,21,23
Florida pine snake	<i>Pituophis melanoleucas</i>	14,21,23
Eastern kingsnake	<i>Lampropeltis getula</i>	19,21,23,28
Scarlet kingsnake	<i>Lampropeltis triangulum</i>	19,21,28
Scarlet snake	<i>Cemophora coccinea</i>	21,23
Southeastern crowned snake.....	<i>Tantilla coronata</i>	19,21,23
Eastern coral snake.....	<i>Micrurus fulvius</i>	19,28
Southern copperhead.....	<i>Agkistrodon contortrix</i>	19,21,28
Florida cottonmouth	<i>Agkistrodon piscivorus</i>	28,54
Dusky pygmy rattlesnake.....	<i>Sistrurus miliarius</i>	19,21,23
Eastern diamondback rattlesnake.....	<i>Crotalus adamanteus</i>	14,21,23
Queen snake	<i>Regina septemvittata</i>	54

BIRDS

Double-crested cormorant	<i>Phalacrocorax auritus</i>	54
Anhinga.....	<i>Anhinga anhinga</i>	54

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Green-backed heron.....	<i>Butorides striatus</i>	54
Great blue heron.....	<i>Ardea herodias</i>	54
Great egret.....	<i>Casmerodius albus</i>	54
Little blue heron.....	<i>Egretta caerulea</i>	54
Cattle egret.....	<i>Bubulcus ibis</i>	54,81
Snowy egret.....	<i>Egretta thula</i>	54
Tri-colored heron.....	<i>Egretta tricolor</i>	54
Yellow-crowned night heron.....	<i>Nycticorax violaceus</i>	54
White ibis.....	<i>Eudocimus albus</i>	54
Wood duck.....	<i>Aix sponsa</i>	54
Turkey vulture.....	<i>Cathartes aura</i>	All
Black vulture.....	<i>Coragyps atratus</i>	All
Swallow-tailed kite.....	<i>Elanoides forficatus</i>	54
Mississippi kite.....	<i>Ictinia mississippiensis</i>	54
Sharp-shinned hawk.....	<i>Accipiter striatus</i>	19,21,23
Cooper's hawk.....	<i>Accipiter cooperii</i>	19,21,23
Red-tailed hawk.....	<i>Buteo jamaicensis</i>	19,21,23
Red-shouldered hawk.....	<i>Buteo lineatus</i>	19,21,23
Broad-winged hawk.....	<i>Buteo platypterus</i>	19,21,23
Bald eagle.....	<i>Haliaeetus leucocephalus</i>	All
Osprey.....	<i>Pandion haliaetus</i>	54
Northern bobwhite.....	<i>Colinus virginianus</i>	14,21,23
Wild turkey.....	<i>Meleagris gallopavo</i>	14,21,23
Killdeer.....	<i>Charadrius vociferus</i>	54
Spotted sandpiper.....	<i>Actitis macularia</i>	54
American woodcock.....	<i>Scolopax minor</i>	21,23
Ring-billed gull.....	<i>Larus delawarensis</i>	54
Forster's tern.....	<i>Sterna forsteri</i>	54
Mourning dove.....	<i>Zenaida macroura</i>	19,21,23
Common ground dove.....	<i>Columbina passerina</i>	19,21,23
Yellow-billed cuckoo.....	<i>Coccyzus americanus</i>	28,
Eastern screech-owl.....	<i>Otus asio</i>	19,21,23
Great horned owl.....	<i>Bubo virginianus</i>	19,21,23,28
Barred owl.....	<i>Strix varia</i>	19,21,23,28
Chuck-will's-widow.....	<i>Caprimulgus carolinensis</i>	19,21,23
Common nighthawk.....	<i>Chordeiles minor</i>	19,21,23
Chimney swift.....	<i>Chaetura pelagica</i>	All
Ruby-throated hummingbird.....	<i>Archilochus colubris</i>	19,28,
Belted kingfisher.....	<i>Ceryle alcyon</i>	54
Northern flicker.....	<i>Colaptes auratus</i>	19,21,28
Pileated woodpecker.....	<i>Dryocopus pileatus</i>	19,21,28

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	19,21,23,28
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	19,21,23,28
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	19,21,23
Hairy woodpecker	<i>Picoides villosus</i>	19,21,23
Downy woodpecker.....	<i>Picoides pubescens</i>	19,21,23
Eastern kingbird	<i>Tyrannus tyrannus</i>	19,21,28
Great crested flycatcher.....	<i>Myiarchus crinitus</i>	28
Eastern phoebe	<i>Sayornis phoebe</i>	19,21,28
Acadian flycatcher.....	<i>Empidonax virescens</i>	19,21,28
Eastern wood-pewee	<i>Contopus virens</i>	19,21
Tree swallow	<i>Tachycineta bicolor</i>	All
N. rough-winged swallow	<i>Stelgidopteryx serripennis</i>	All
Barn swallow	<i>Hirundo rustica</i>	Fly Over
Purple martin	<i>Progne subis</i>	Fly Over
Blue jay	<i>Cyanocitta cristata</i>	19,21,23,28
American crow	<i>Corvus brachyrhynchos</i>	Fly Over
Fish crow	<i>Corvus ossifragus</i>	54
Carolina chickadee	<i>Parus carolinensis</i>	19,21,28
Tufted titmouse.....	<i>Parus bicolor</i>	19,21,28
Red-breasted nuthatch.....	<i>Sitta canadensis</i>	19,21,28
Brown-headed nuthatch.....	<i>Sitta pusilla</i>	19,21,23
Brown creeper	<i>Certhia americana</i>	21,23
House wren	<i>Troglodytes aedon</i>	Fly Over
Winter wren	<i>Troglodytes troglodytes</i>	Fly Over
Carolina wren.....	<i>Thryothorus ludovicianus</i>	Fly Over
Northern mockingbird	<i>Mimus polyglottos</i>	All
Gray catbird.....	<i>Dumetella carolinensis</i>	All
Brown thrasher	<i>Toxostoma rufum</i>	19,21,23
Eastern bluebird.....	<i>Sialia sialis</i>	Fly Over
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	19,21
Golden-crowned kinglet	<i>Regulus satrapa</i>	21,23
Ruby-crowned kinglet.....	<i>Regulus calendula</i>	21,23
American robin	<i>Turdus migratorius</i>	Fly Over
Wood rush	<i>Hulocichla mustelina</i>	19,21,23
Hermit thrush.....	<i>Catharus guttatus</i>	19,21,23
Swainson's thrush	<i>Catharus ustulatus</i>	19,21,23
Gray-cheeked thrush	<i>Catharus minimus</i>	19,21,23
Veery	<i>Catharus fuscescens</i>	19,28
Cedar waxwing.....	<i>Bombycilla cedrorum</i>	19,21,28
Loggerhead shrike.....	<i>Lanius ludovicianus</i>	Fly Over
White-eyed vireo	<i>Vireo griseus</i>	19,21

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Red-eyed vireo	<i>Vireo olivaceus</i>	19,21
Black-and-white warbler	<i>Mniotilta varia</i>	All
Prothonotary warbler	<i>Protonotaria citrea</i>	All
Swainson's warbler	<i>Limnithlypis swainsonii</i>	All
Worm-eating warbler	<i>Helmitheros vermivorus</i>	All
Golden-winged warbler	<i>Vermivora chrysoptera</i>	All
Blue-winged warbler	<i>Vermivora pinus</i>	All
Tennessee warbler	<i>Vermivora peregrina</i>	All
Orange-crowned warbler	<i>Vermivora celata</i>	All
Northern parula	<i>Parula americana</i>	21,23
Magnolia warbler	<i>Dendroica magnolia</i>	19,28
Yellow-rumped warbler	<i>Dendroica coronata</i>	All
Cerulean warbler	<i>Dendroica cerulea</i>	All
Blackburnian warbler	<i>Dendroica fusca</i>	All
Yellow-throated warbler	<i>Dendroica dominica</i>	All
Chestnut-sided warbler	<i>Dendroica pensylvanica</i>	All
Bay-breasted warbler	<i>Dendroica castanea</i>	All
Pine warbler	<i>Dendroica pinus</i>	All
Palm warbler	<i>Dendroica palmarum</i>	28,
Ovenbird	<i>Seiurus aurocapillus</i>	Fly Over
Northern waterthrush	<i>Seiurus noveboracensis</i>	28,54
Louisiana waterthrush	<i>Seiurus motacilla</i>	143,54
Kentucky warbler	<i>Oporornis formosus</i>	All
Common yellowthroat	<i>Geothlypis trichas</i>	19,28
Yellow-breasted chat	<i>Icteria virens</i>	19,28
Hooded warbler	<i>Wilsonia citrina</i>	All
American redstart	<i>Setophaga ruticilla</i>	19,21
Cardinal	<i>Cardinalis cardinalis</i>	19,21,28
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	19,21,28
Blue grosbeak	<i>Guiraca caerulea</i>	19,28
Indigo bunting	<i>Passerina cyanea</i>	19,28
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	19,21,28
Vesper sparrow	<i>Pooecetes gramineus</i>	19,21,23
Bachman's sparrow	<i>Amophila aestivalis</i>	19,21,23
Dark-eyed junco	<i>Junco hyemalis</i>	19,21,28
Chipping sparrow	<i>Spizella passerina</i>	19,21,23
Field sparrow	<i>Spizella pusilla</i>	All
White-throated sparrow	<i>Zonotrichia albicollis</i>	19,21,23,28
Fox sparrow	<i>Passerella iliaca</i>	19,21
Swamp sparrow	<i>Melospiza georgiana</i>	28
Song sparrow	<i>Melospiza melodia</i>	All

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Eastern meadowlark	<i>Sturnella magna</i>	21,23
Red-winged blackbird	<i>Agelaius phoeniceus</i>	33,35
Orchard oriole	<i>Icterus spurius</i>	19,21
Rusty blackbird	<i>Euphagus carolinus</i>	33
Common grackle	<i>Quiscalus quiscula</i>	54
Brown-headed cowbird.....	<i>Molothrus ater</i>	21,23
Scarlet tanager	<i>Piranga olivacea</i>	19,21
Summer tanager	<i>Piranga rubra</i>	19,21
Evening grosbeak	<i>Hesperiphona vespertina</i>	Fly Over
Purple finch	<i>Carpodacus purpureus</i>	19,21
Pine siskin	<i>Carduelis pinus</i>	21,23
American goldfinch	<i>Carduelis tristis</i>	19,21,23

MAMMALS

Virginia opossum	<i>Didelphis virginiana</i>	19,28,
Southeastern shrew	<i>Sorex longirostris</i>	19,21,28
Short-tailed shrew	<i>Blarina brevicauda</i>	19,21,28
Least shrew	<i>Cryptotis parva</i>	19,21,28
Eastern mole	<i>Scalopus aquaticus</i>	23
Nine-banded armadillo*	<i>Dasypus novemcinctus</i>	19,21,23,28
Eastern cottontail	<i>Sylvilagus floridanus</i>	21,23
Gray squirrel	<i>Sciurus carolinensis</i>	19,21,23
Sherman's fox squirrel.....	<i>Sciurus niger shermani</i>	14,19,21,23
Southern flying squirrel	<i>Glaucomys volans</i>	14,23
Southeastern pocket gopher	<i>Geomys pinetis</i>	14,23
American beaver	<i>Castor canadensis</i>	54
Eastern harvest mouse	<i>Reithrodontomys humulis</i>	21,23
Cotton mouse.....	<i>Peromyscus gossypinus</i>	21,23
Oldfield mouse	<i>Peromyscus polionotus</i>	21,23
Golden mouse.....	<i>Ochrotomys nuttalli</i>	23
Hispid cotton rat	<i>Sigmodon hispidus</i>	19,21
Eastern woodrat	<i>Neotoma floridana</i>	19,21,28
Woodland vole	<i>Microtus pinetorum</i>	19,21,28
Gray fox	<i>Urocyon cinereoargenteus</i>	14,19,21,23,28
Northern raccoon	<i>Procyon lotor</i>	All
Long-tailed weasel	<i>Mustela frenata</i>	14,19,21,28
River otter.....	<i>Lutra canadensis</i>	54,54
Bobcat.....	<i>Lynx rufus</i>	14,19,21,23,28
White-tailed deer.....	<i>Odocoileus virginianus</i>	14,19,21,23,28
Coyote*	<i>Canis latrans</i>	All

* Non-native Species

Torreya State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Feral hog*	<i>Sus scrofa</i>	Most
Florida black bear	<i>Ursus americanus floridanus</i>	14,19,21,23,28,33

Addendum 6 – Imperiled Species Ranking Definitions

Imperiled Species Ranking Definitions

The Nature Conservancy and the Natural Heritage Program Network (of which FNAI is a part) define an element as any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave or other ecological feature. An element occurrence (EO) is a single extant habitat that sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element.

Using a ranking system developed by The Nature Conservancy and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks to each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element occurrences, estimated abundance (number of individuals for species; area for natural communities), range, estimated adequately protected EOs, relative threat of destruction, and ecological fragility.

Federal and State status information is from the U.S. Fish and Wildlife Service; and the Florida Game and Freshwater Fish Commission (animals), and the Florida Department of Agriculture and Consumer Services (plants), respectively.

FNAI GLOBAL RANK DEFINITIONS

- G1Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or fabricated factor.
- G2Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- G4apparently secure globally (may be rare in parts of range)
- G5demonstrably secure globally
- GHof historical occurrence throughout its range may be rediscovered (e.g., ivory-billed woodpecker)
- GX.....believed to be extinct throughout range
- GXC.....extirpated from the wild but still known from captivity or cultivation
- G#?Tentative rank (e.g., G2?)
- G#G#.....range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T#rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)

Imperiled Species Ranking Definitions

- G#Q.....rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
- G#T#Q.....same as above, but validity as subspecies or variety is questioned.
- GUdue to lack of information, no rank or range can be assigned (e.g., GUT2).
- G?.....Not yet ranked (temporary)
- S1Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- S4apparently secure in Florida (may be rare in parts of range)
- S5demonstrably secure in Florida
- SHof historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- SX.....believed to be extinct throughout range
- SAaccidental in Florida, i.e., not part of the established biota
- SE.....an exotic species established in Florida may be native elsewhere in North America
- SNregularly occurring but widely and unreliably distributed; sites for conservation hard to determine
- SUdue to lack of information, no rank or range can be assigned (e.g., SUT2).
- S?.....Not yet ranked (temporary)
- NNot currently listed, nor currently being considered for listing, by state or federal agencies.

LEGAL STATUS

FEDERAL

(Listed by the U. S. Fish and Wildlife Service - USFWS)

- LE.....Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
- PE.....Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.LTListed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.

Imperiled Species Ranking Definitions

- PT.....Proposed for listing as Threatened Species.
- CCandidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
- E(S/A).....Endangered due to similarity of appearance.
- T(S/A).....Threatened due to similarity of appearance.

STATE

ANIMALS ...(Listed by the Florida Fish and Wildlife Conservation Commission - FFWCC)

- LE.....Listed as Endangered Species by the FFWCC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.
- LT.....Listed as Threatened Species by the FFWCC. Defined as a species, subspecies, or isolated population, which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat, is decreasing in area at a rapid rate and therefore is destined or very likely to become an endangered species within the near future.
- LS.....Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance or substantial human exploitation that, in the near future, may result in its becoming a threatened species?

PLANTS(Listed by the Florida Department of Agriculture and Consumer Services - FDACS)

- LE.....Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.
- LT.....Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.

Addendum 7 – Cultural Information

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised February 2007)

These procedures apply to state agencies, local governments and non-profits that manage state-owned properties.

A. General Discussion

Historic resources are both archaeological sites and historic structures. Per Chapter 267, Florida Statutes, "Historic property" or "historic resource" means any prehistoric district, site, building, object, or other real or personal property of historical, architectural or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state."

B. Agency Responsibilities

Per State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the project, permit, grant, etc.

State agencies shall preserve the historic resources that are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

C. Statutory Authority

Statutory Authority and more in depth information can be found in the following:

Chapter 253, F.S. – State Lands

Chapter 267, F.S. – Historical Resources

Chapter 872, F.S. – Offenses Concerning Dead Bodies and Graves

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised February 2007)

Other helpful citations and references:

Chapter 1A-32, F.A.C. – Archaeological Research

Other helpful citations and references:

Chapter 1A-44, F.A.C. – Procedures for Reporting and Determining Jurisdiction Over Unmarked Human Burials

Chapter 1A-46, F.A.C. – Archaeological and Historical Report Standards and Guidelines

The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings

D. Management Implementation

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to: approval of the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions, exterior alteration or related new construction regarding historic structures must also be submitted to the Division of Historical Resources for review and comment by the Division's architects. Projects involving structures fifty years of age or older, must be submitted to this agency for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant. These must be evaluated on a case-by-case basis.

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should prepare for locating and evaluating historic resources, both archaeological sites and historic structures.

Preservation Treatments as Defined by Secretary of Interior's Standards and Guidelines

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, the following information, at a minimum, must be submitted for comments and recommendations.

Project Description – A detailed description of the proposed project including all related activities. For land clearing or ground disturbing activities, the depth and extent of the disturbance, use of heavy equipment, location of lay down yard, etc. For historic structures, specific details regarding rehabilitation, demolition, etc.

Project Location – The exact location of the project indicated on a USGS Quadrangle map, is preferable. A management base map may be acceptable. Aerial photos indicating the exact project area as supplemental information are helpful.

Photographs – Photographs of the project area are always useful. Photographs of structures are required.

Description of Project Area – Note the acreage of the project; describe the present condition of project area, and any past land uses or disturbances.

Description of Structures – Describe the condition and setting of each building within project area if approximately fifty years of age or older.

Recorded Archaeological Sites or Historic Structures – Provide Florida Master Site File numbers for all recorded historic resources within or adjacent to the project area. This information should be in the current management plan; however, it can be obtained by contacting the Florida Master Site File at (850) 245-6440 or Suncom 205-6440.

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Susan M. Harp
Historic Preservation Planner
Division of Historical Resources
Bureau of Historic Preservation
Compliance and Review Section
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Phone: (850) 245-6333
Fax: (850) 245-6438

Preservation Treatments as Defined by Secretary of Interior's Standards and Guidelines

The criteria to be used for evaluating eligibility for listing in the National Register of Historic Places are as follows:

- 1) Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
 - a) are associated with events that have made a significant contribution to the broad patterns of our history; and/or
 - b) are associated with the lives of persons significant in our past; and/or
 - c) embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
 - d) have yielded, or may be likely to yield, information important in prehistory or history.
- 2) Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
 - a) a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
 - b) a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
 - c) a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
 - d) a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or

Preservation Treatments as Defined by Secretary of Interior's Standards and Guidelines

- e) a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- f) a property achieving significance within the past 50 years, if it is of exceptional importance.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values.

Stabilization is defined as the act or process of applying measures designed to reestablish a weather resistant enclosure and the structural stability of an unsafe or deteriorated property while maintaining the essential form as it exists at present.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Addendum 8 – Timber Management Analysis

Purpose

This document is intended to fulfill the timber assessment requirement for Torreya State Park as required by Chapter 253.036, Florida Statutes. The goal of this timber assessment is to evaluate the potential and feasibility of managing timber resources for conservation and revenue generation purposes.

Objective

A primary management objective for Torreya State Park is to restore industrial pine plantations to their original native plant communities. Areas that are already in natural conditions are being managed to perpetuate the natural communities. Large tracts of protected land with diverse habitat types afford the opportunity to manage for a variety of native plant and animal species. Torreya State Park has a variety of ecotypes from Sandhill to Bottomland Hardwood Forest. Habitat restoration and re-introduction of periodic fire will allow managers the ability to preserve these natural communities.

General Timber Management Guidelines

Timber management on Torreya State Park should be viewed as a tool to facilitate ecosystem restoration and maintenance. There are a large number of acreages that are currently in pine plantations. The timber sales from these areas should generate revenue to offset the cost of the restoration of the area.

To understand timber management methods, knowledge of a few silvicultural terms is useful. The first is Basal Area. An individual tree's basal area is its cross sectional area (in square feet) measured four and one-half feet above the ground. Basal Area per acre (BA) is the sum of the basal area of every tree within a stand divided the number of acres in the stand. A timber stand's tree stocking and density can be expressed in square feet of basal area per acre.

The next term is diameter breast height (DBH). This is the diameter of a tree measured at four and one-half feet above the ground. It is used in calculating the Basal Area and combined with height can determine the volume of each tree.

Fully stocked pine stands have enough trees per acre of a size large enough to utilize the growing space without causing over-crowding. Pine stands with 70 to 100 sq. ft. BA are considered fully stocked. More, smaller diameter trees than larger diameter ones are required to equal one square foot of basal area per acre. (For example: It takes 357 evenly spaced, six-inch diameter breast height trees per acre to equal 70 sq. ft. BA. Whereas, only 89 twelve-inch DBH trees per acre equal the same 70 sq. ft. BA.)

Basal Area can be roughly correlated to crown coverage and therefore needle-cast. About 40 to 60 sq. ft. BA of pine trees should provide sufficient needles to carry periodic fire while allowing adequate sunlight for native grasses to be maintained.

In natural, pine dominated forest systems trees die because they become old and less able to withstand insect and disease attack. (The life expectancy of slash pine is only around 100 years.) Bark beetles invade a weakened tree then multiply and kill some of its neighbors. This creates holes in the canopy of various sizes that allow full sunlight to reach the forest floor. Lightning strikes and windstorms do the same thing. In addition, lightning caused fires burn away leaf litter and expose bare mineral soil. The bare soil and canopy openings permit large numbers of direct sunlight-dependent pine seedlings to establish and grow.

Pine seedlings become established in these holes at very high densities. It is not uncommon to have five to ten thousand seedlings per acre in scattered openings (visual evidence of this tight spacing has been lost due to past stump harvesting practices and frequent wildfires that burn above ground portions of the stumps). Recurrent wildfires and competition for sunlight, moisture and nutrients favor the strongest, fastest growing pine saplings. Trees die off continually over the life of a stand until mortality replaces the survivors with young seedlings in a never-ending cycle. The result is an uneven aged stand where each group of trees created by a canopy opening is about the same age. However, the stand as a whole is a mosaic of clusters that have different ages and densities. Ecologically based timber management strives to mimic these natural processes and still be able to harvest trees that are destined to die anyway. The challenge is to capture the value of the timber while minimizing the impact on the system as a whole.

Stands having an adequate number of mature pines but lacking in young trees should have natural regeneration encouraged. Those with an insufficient number of seed trees may require artificial regeneration methods. In either case, off-site hardwoods may have to be controlled to facilitate seedling establishment.

Harvesting a portion of the timber maintains healthy pine growth and allows sunlight to the forest floor, providing better conditions for healthy groundcover. Trees removed in the thinning process can be sold to generate revenue to be used in other land management projects. Likely markets for early thinning from pine stands currently include pulpwood and chip-n-saw.

The need for second and later thinning will depend on how low the BA was taken in the first thin and the subsequent growth rate of leave trees. If the BA is reduced to 50 to 70 sq. ft. in the first cut, another harvest will probably be needed in ten to fifteen years. Trees removed from the second and succeeding operations produce valuable products and therefore more money. Current market conditions have some second thinning

products worth at least five times as much as wood that was cut during the original harvest. Third thinning trees can be worth twice as much as the second thin. All of this revenue can be generated and still have a stand of pine trees and a healthy ecosystem.

Existing Timber Resources

There are large number acres in pine plantations on Torrey State Park. Species composition for these plantations includes longleaf pine, slash pine, loblolly pine and sand pine. There are also areas of natural longleaf pine, mixed pine-hardwood, hardwood hammocks, slope forest and bottomland hardwood forest. Due to the nature of the purchases of Torrey State Park, pine plantations can be divided into three main areas: Aspalaga, Sweetwater and the Original Park. This timber assessment will focus on the pine plantations and the restoration of those sites to native plant communities.

Sand Pine Plantations: The sand pine plantations on Torrey State Park are on parcels that were purchased from St. Joe Land Development Co. These stands were planted purely with fiber production in mind. The majority of the sand pine plantations are on the Sweetwater tract with some on the Aspalaga tract.

The Sweetwater stands are primarily pre-merchantable with little native groundcover remaining because the sites were intensively prepared and wind-rowed prior to planting. There is an endangered plant species in this area as well, Apalachicola rosemary (*Conradina glabra*). The Sweetwater sand pine stands will be gradually eliminated via clear cutting, as the park is able to re-seed the areas with native groundcover species

The sand pine plantations on the Aspalaga tract are of merchantable size. There is also good native ground cover still intact in this stand. Recommendations for this stand are to clear-cut. This area could be kept as a native grass seed collection site after the sand pine regeneration has been controlled. Control of invading laurel oak, water oak and sweetgum may be necessary through use of fire, mechanical treatment and/or selective application of herbicide.

Slash Pine Plantations: Slash pine plantations occur on all three tracts of Torrey State Park. These plantations have tree sizes ranging from pre-merchantable to small chip-n-saw and can provide a good source of revenue for the park for years to come. As these stands are thinned and the trees grow into larger, more valuable products, more revenue can be brought in. The general recommendation for all of these stands is to apply a first thinning when the trees attain merchantable size. This thinning should remove a majority of the diseased, damaged, suppressed and defective trees, as well as some of the dominant and co-dominant trees to reach the desired number of trees to be left. Second thinning would be conducted when these trees reach 90-100 square feet of

basal area per acre. With this thinning, only the best trees would be left. The trees could be allowed further growth, clear-cut or used to regenerate the stand.

Loblolly Pine Plantations: For the most part the loblolly pine plantations on Torrey State Park are off site with the exception of the northern portion of the Aspalaga tract. These off site stands need to be clear-cut as soon as they are merchantable in order to facilitate restoration. For the plantations on the northern portion of the Aspalaga tract, the general recommendation is to apply a first thinning when the trees reach merchantable size. This thinning should remove a majority of the diseased, damaged, suppressed and defective trees, as well as some of the dominant and co-dominant trees to reach the desired number of trees to be left. Second thinning would be conducted when these trees reach 90-100 square feet of basal area per acre. With this thinning, only the best trees would be left. The trees could be allowed further growth, clear-cut or used to regenerate the stand.

Longleaf Pine Plantations: Currently the only longleaf pine plantation occurs on the Sweetwater tract. This stand is a long linear strip that was planted in longleaf pine in the middle of the sand pine. The trees are currently pre-merchantable, ranging in size from the grass stage to approximately 15 feet tall. The current recommendation is to let this stand grow until the trees reach a merchantable size. At that time, a re-evaluation of the stand should be conducted to assess the potential for thinning.

Natural stands of longleaf pine also occur in Upland Pine habitats on the park. The sites considered “plantations” and generally requires no management actions other than prescribed fire.

Mixed Loblolly and Slash Pine Plantations: Several areas on Torrey State Park were planted in both loblolly and slash pine. It appears that one species was planted first and the survival results were poor. Due to the poor survival, the other species was planted without removal of the first. This has resulted in a stand that is overstocked in some areas. In these overstocked areas, the trees are in heavy competition with each other. In addition, in some of these stands one or both species is off-site. Recommendation for these stands is to thin or clear-cut when merchantable. The determination to thin or clear-cut should be made by looking at the growth of the trees over the past five years and projecting the time needed to grow the stand into a more profitable product.

Regeneration

Natural regeneration provides a lower cost alternative to planting, on sites where species conversion/restoration is not desired. Randomly spaced seedling distribution resulting from natural regeneration gives the stand a more natural appearance and the seedlings generally thrive better than planted seedlings because they come from local seed sources that are adapted to the local climate and site conditions.

Drawbacks to natural regeneration are the time that it takes to establish a stand and inconsistency of stocking; that is, often there are either too many seedlings or not enough. Despite the best efforts of the manager, the cone crop and weather conditions needed for adequate seedling establishment might not come for several years. This could mean repeated site preparation treatments.

The basic guidelines for natural regeneration are as follows:

- * Harvesting the remainder of the stand in a manner that creates openings with adequate sunlight to allow germination to occur.
- * Checking seed trees in the spring of the year to see if they have an adequate cone crop to make natural regeneration likely to occur.
- * If adequate cones are present, performing site preparation (chopping, burning etc.) during the summer to expose bare mineral soil and minimize vegetative competition to the seedlings.
- * Evaluating the amount of natural regeneration during the spring of the following year to ascertain that germination has occurred.
- * Removal of the overstory, if creating a single-aged even-aged stand is the goal.
- * Reduce the number of seedlings if natural regeneration has been too successful.

Artificial

Hand Planting: Hand planting containerized (tubeling) longleaf pine seedlings is probably the best option for reestablishment in areas where an inadequate number of seed trees exists. Bare-root trees are planted in the winter by machine as described below. Tubelings can be planted in winter or summer, thereby extending the planting season. Containerized seedlings planted early in the summer rainy season have shown excellent survival on well-prepared sites.

A word of caution is needed about planting seedlings. Adequate site preparation is essential to seedling survival. High densities of off-site hardwoods (primarily oaks) may require broadcast or strip spraying of an appropriate herbicide. However, if adequate density of wiregrass and other native groundcover is established, fire can be employed to limit hardwood density.

Salvage Sales

On occasion, small volumes of wood may need to be removed due to fire, windstorm, insect or other damage. The decision whether or not to harvest the affected timber will depend on the threat to the surrounding stands, risk of collateral ecological damage, and the volume/value of the trees involved. For example, small, isolated lightning-strike beetle kills are a natural part of a healthy ecosystem and normally would not be

cut. However, if a drought caused the insect infestation to spread, the infected trees and a buffer zone might have to be removed.

Access

To conduct any management activities on Torreya State Park access issues need to be worked out. Some areas of the Park are only accessible through private landowners' property. Before any timber management planning begins, permission from these landowners needs to be obtained.

In addition, some of the roads on Torreya State Park cannot withstand the abuse of having logging trucks traveling over them. Plans need to be in place for what stabilization materials will be allowed. These allowable materials need to be in the timber sale bid packages so potential buyers can adjust their bids accordingly.

Prescribed Fire

Florida upland ecosystems are fire dependent. Lightning sparked fires are natural to these communities. Prior to European settlement, wildfire occurred in both of these ecosystems at regular intervals of one to three years.

Fires in sand pine dominated systems tend to be less frequent and more intense than in areas with more grasses. These extreme fires adversely affect overstory plants. Hot fires can kill pine trees directly or weaken them enough to enable insects kill them. Lack of mature long needled pines means loss of this leaf litter that normally helps support less severe ground fires.

The intelligent use of prescribed fire is essential to the restoration and maintenance of open healthy, pine-dominated ecosystems. Although prescribed fire is desirable, caution must be exercised when reintroducing fire into these systems. To prevent damage to delicate root systems and avoid smoky duff fires, burner must be sure that there is adequate moisture in any organic matter thicker than approximately one inch. In stands with heavy duff layers, try not to burn more than one inch of duff at a time on approximately two to three-year intervals. At least the first burn should be during the dormant season after pine regeneration has reached at least six feet in height. To reduce seedling mortality, consider conducting the first burn during winter months. If ground fuels are not too heavy, succeeding burns can be switched to the growing season.

Cutover sand pine communities usually will not support prescribed fire without considerable effort. Due to the discontinuous fuels, burns initiated in surrounding sand hills will normally self-extinguish upon entering the scrub. Once fuel loading becomes high enough, head or ring firing techniques may push flames through these scrubs.

Summary

Torrey State Park is a valuable natural resource that will provide numerous benefits to the local environment as well as local user groups. Potential impacts to the multiple uses of this property should be weighed before implementing any timber management activity. An example of this would be to buffer timber harvesting around hiking trails and campsites.

The size and age distribution of the pine plantations on Torrey State Park will help provide a substantial income in the coming years. This income will help partly offset the large costs in restoring these areas to native Sandhill and Upland Pine plant communities. The key is to implement the proper forest management methods to meet the multiple-use management goals, while providing revenues for an assortment of land management activities.

Addendum 9 – 2009 Land Management Review Report With Responses

Torrey State Park 2009 Final Land Management Review Report

Name of Site: Torrey State Park

County: Liberty County

Managed by: Department of Environmental Protection, Division of Recreation and Parks (Division)

Acres: 13,204 Acres

Review Date: 6/1-2/09

Review Team Determination

1. Managed in accordance with acquisition purpose? **Yes**
2. Management practices, including public access, in compliance with the management plan? **Yes**

Consensus Commendations to the Managing Agency

The following commendations resulted from discussion and vote of the review team members.

1. The team commends the Citizen Support Organization for their efforts in assisting the Division staff in natural resource management and educational outreach.
2. The team commends the Division on their efforts to control feral hogs at the park.
3. The team commends the manager and staff on upland pine and sandhill restoration efforts, and for strengthening their partnership with The Nature Conservancy in this endeavor.
4. The team commends the manager and staff for their public outreach into the local community.
5. The team commends the manager and staff for continued success in meeting prescribed burn objectives of the park.
6. The team commends the manager and staff on their historic resources stewardship at the park.
7. The team commends the Division on erosion control efforts at Danny Black Road and Brown's Branch.

Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members.

Torreya State Park 2009 Final Land Management Review Report

1. The team recommends that the Division work with TNC and FWC to determine population levels of whitetail deer and to assess impacts of deer on listed plant species in the park.

Managing Agency Response: Agree.

2. The team recommends that the Division install barriers (fencing or guard rails) behind the campsite at Weeping Ridge to reduce erosion problems on the slope.

Managing Agency Response: Agree/Disagree. The park will assess potential erosion caused by visitor foot traffic from campsites and will address corrective measures for erosion problems. However, installing barriers may not be the most appropriate method of protection.

3. This park, including all land acquisitions to date, support highly erodible soils, steep topographic relief and sensitive, unique biota. The team recommends that this park is not appropriate for equestrian or off-road bicycle use. This supports existing management policy of the original park.

Managing Agency Response: The Division recognizes the sensitivity of the park's resources and agrees that outdoor recreational use should not impact these resources. The Division will consider the recommendation during their normal management planning process along with other park uses.

Management Actions Exceeded Expectations

1. Natural Communities, specifically Slope Forest, Upland Hardwood Forest, Upland Pine Forest, Bottomland Swamp, Seepage Stream and Bluff.
2. Listed Species, specifically Animal Inventory, Bald Eagle, Gopher Tortoise, Plant Inventory, Torreya, Conradina, Florida Yew.
3. Natural Resource survey, specifically Listed Species Habitat Monitoring, Other Non-Game Species/Habitat Monitoring, Invasive Species Survey/Monitoring.
4. Cultural Resources, specifically Cultural Resource Survey, Protection and Preservation.
5. Resource Management, specifically Area Being Burned, Frequency and Quality
6. Non-Native, Invasive Problem Species, specifically Prevention and Control of Plants, Animals and Pests/Pathogens.
7. Hydrologic/Geologic Function, specifically Roads and Culverts.
8. Ground Water Monitoring, specifically Ground Water Quality and Quantity.
9. Resource Protection, specifically Boundary Survey, Gates and Fencing, Signage and Law Enforcement Presence.

10. Public Access and Education, specifically Roads, Parking, Wildlife, Invasive Species, Habitat Management Activities, Interpretive Facilities and Signs, Recreational Opportunities, Management of Visitor Impacts.
11. Managed Area Uses, specifically Picnicking, Hiking, Camping, Bicycling and Environmental Education.

Findings

1. Discussion in the management plan regarding Natural Communities, specifically Sandhill.

Managing Agency Response: Agree. Additional discussion will be included because of recent acquisitions.

2. Discussion in the management plan regarding Listed Species, specifically Apalachicola Dusky Salamander.

Managing Agency Response: Agree.

3. Discussion in the management plan regarding Natural Resource Survey, specifically Other Habitat Management Effects Monitoring.

Managing Agency Response: Agree. The Division is continuing to monitor effects of restoration on Gopher tortoises and other species, and will discuss the monitoring in future plan updates.

4. Discussion in the management plan regarding Restoration of Ruderal Areas, specifically Sandpine to Sandhill restoration, SandPine to Upland Pine restoration, and Clay Pit Erosion Control.

Managing Agency Response: Agree. Additional discussion will be included because of recent acquisitions.

5. Discussion in the management plan regarding Resource Protection, specifically Law Enforcement Presence.

Managing Agency Response: Agree. The management plan update will address law enforcement needs. The Division must request additional assistance through the Division of Law Enforcement or from a local law enforcement agency.

6. Discussion in the management plan regarding Adjacent Property Concerns, specifically I-10 corridor/ smoke management and inholdings/additions.

Torrey State Park 2009 Final Land Management Review Report

Managing Agency Response: Agree. The next unit plan will discuss smoke management.

7. Discussion in the management plan regarding Public Access and Education, specifically the Boat Launch.

Managing Agency Response: Agree. Additional discussion will be included as a result of the recent acquisitions made at the park.

8. Discussion in the management plan regarding Uses Proposed in Management Plan, specifically Bicycle Trails and Equestrian Trails.

Managing Agency Response: Disagree. Bicycle trails and equestrian trails are not recommended in the management plan.

9. Discussion in the management plan regarding Management Resources, specifically Buildings, Staff and Funding.

Managing Agency Response: Agree on funding (assuming land management issues are the concern). The updated unit management plan will address land management funding needs. However, Division funding is determined annually by the Florida Legislature.